LITERACY CONNECTIONS: EARLY LITERACY INTERVENTIONS FOR

YOUNG CHILDREN FROM AT-RISK POPULATIONS

by

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DEDICATION

I dedicate this dissertation to my family. My parents taught me to appreciate where I came from. My husband helps me to value my present. My children give me hope for the future. You have been supportive of me from the beginning. You have changed and grown in ways I don't think you knew you could. Thank you for being my reason to keep moving forward.

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ABSTRACT

Children who have experienced developmental, social, or economic risks may benefit

more from attending high-quality preschool intervention programs than their more

advantaged peers; thus, programs that have delivered high-quality experiences may have

served as a protective factor for these children to help reduce the achievement gap that

has existed at school entry. The overarching purpose of this dissertation was to examine

best practice in providing systemic early literacy interventions as a protective factor

against school failure for young at-risk children. The three studies comprising this

dissertation included analyses of systemic early literacy interventions for young children

at risk of reading and school failure due to (a) developmental delays, (b) low

socioeconomic status, or (c) English language learner status. Consistent with previous

literature, the researcher found that children participating in a responsive early literacy

intervention program were better prepared for kindergarten than were non-participating

peers. Responsive early literacy interventions were defined as purposeful instruction

designed to meet the educational needs of children by implementing an embedded-

explicit or balanced approach to teaching. Attendance in high-quality early education

programs—especially for children from disadvantaged backgrounds—was linked to

lasting effects on indicators related to student achievement.

Keywords: early literacy intervention, at-risk preschoolers, responsive literacy

CHAPTER 1

INTRODUCTION

Early literacy skills are vital to children's success in school and in later life. One of the best predictors of whether children will be successful in school and go on to contribute actively in society has been the rate of progress in reading and writing (Neuman, Copple, & Bredekamp, 2000). Early literacy is the process of learning to understand and use language for functional communication. Functional communication is the forerunner to later success in reading and writing. Children first learn to use oral forms of language, which are comprised of listening and speaking and then begin to explore and implement the written forms of language, which are reading and writing.

Early literacy encompasses a broad array of skills representing early reading and writing behaviors, knowledge, and interests. The specific early literacy skills that become the building blocks for later reading and writing are (a) vocabulary knowledge (knowing the names of objects), (b) print motivation (an interest in and enjoyment of books), (c) print awareness (knowledge that the print on the page is what is being read by someone who knows how to read), (d) narrative skills (an ability to understand and retell stories or events), (e) letter knowledge (an awareness that letters have names and are different from each other and that specific sounds go with specific letters), and (f) phonological awareness (the ability to hear and manipulate the smaller sounds in words). Early literacy skills are also referred to as *emergent*, *precursor*, or *predictive literacy skills* to distinguish them from the more conventional literacy skills of (a) decoding, (b) oral reading, (c) fluency, (d) reading comprehension, and (e) writing. Most children learn

to decode the implicit, underlying structure of oral and written language incidentally and gradually during the years preceding formal literacy instruction. Children who grow up in literature-rich environments enter school with an understanding of the concepts underlying reading before beginning formal education (Adams, 1990; Dickinson & Tabors, 2001).

The literacy concepts, knowledge, and skills developed in early childhood are excellent predictors of children's future reading success (Adams, 1990; Donaldson, 1978; Snow, Burns, & Griffin, 1998; Whitehurst & Lonigan, 1998). Children who experience developmental, social, or economic risks may benefit more from attending high-quality preschool intervention programs than their more advantaged peers; thus, high-quality experiences may serve as a protective factor for these children to help reduce the achievement gap that exists at school entry. In contrast, researchers have shown that children who had difficulty developing literacy skills in early childhood typically remained poor readers throughout their school years (Adams, 1990; Francis, Shaywitz, Stuebing, Shaywitz, & Fletcher, 1996; Juel, 1988; Stanovich, 1986; Torgesen & Burgess, 1998).

Sociocultural Learning Theory as a Framework

Vygotsky's sociocultural learning theory (1978) was the theoretical lens through which the research was viewed. Vygotsky described learning as a social process and the origination of human intelligence in society or culture in which social interaction has played a fundamental role in the development of cognition. He developed the sociocultural learning theory in which he theorized that higher cognitive functions in

children emerged through practical activity within a social environment and was contingent upon cultural practices and language as well as on cognitive processes.

Vygotsky (1978) also presented the zone of proximal development, often understood as the way in which the acquisition of new knowledge is dependent on previous learning, as well as the availability of instruction in socially mediated interactions. Adults and peers engage to help children learn how to use their culture's psychological and technical tools. Psychological tools that inform intellectual functioning include language, counting systems, writing, maps, memorization, and attendant skills. Physical tools that inform intellectual development include computers or electronic games. Both psychological and physical tools have helped children navigate language in their environment as they learn to use the tools most valued by their society.

Make-believe play, including make-believe drawing and writing, is a process of developing written language. As a symbolic activity, pretend play allows children to develop and refine their capacity to use symbols to represent experiences and to construct imaginary worlds that they have drawn upon when beginning to read and write. Vygotsky viewed language as the most critical psychological tool. Thinking, comprehending, and producing language are all processes that affect individual perceptions of a child's social world. Literacy, language, and culture are interrelated for young children. Preschool-age children learn to view the values and beliefs of their culture in a positive and nurturing light through literacy experiences. Language is also an important expression of culture as young children learn to master the knowledge and skills that form the basis of their cultural identity when they learn their home language.

Early Childhood Risk Factors

Several risk factors make young children vulnerable to experiencing difficulties in acquiring critical early literacy fundamentals. These risk factors include exhibiting developmental disability (e.g., oral language impairment, mental retardation, or hearing impairment), speaking a home language or dialect that differs from the local academic language or living in a household in which experiences with oral and written language are infrequent. For children in such circumstances, a preventive model of early literacy intervention is needed to remediate the attainment of the skills that have served as the foundation for later literacy achievements (Justice, Invernizzi, & Meier, 2002; Snow et al., 1998). For preschoolers facing educational challenges and at risk of educational failure, increasing early literacy skills are vital to closing the achievement gap between them and their more advantaged peers (Klein & Knitzer, 2007).

Preschoolers at Risk Due to Developmental Delay

Early childhood special education provides free, appropriate, specially designed instruction to meet the unique needs of preschool children with a disability until the age of eligibility for kindergarten (Arizona Revised Statutes §15-761, 22). Instruction is provided in the least restrictive environment, which often is the public preschool classroom. Children who qualify receive preschool special education services under the category of speech language impairment (SLI), developmental delay (DD) or preschool severe delay (PSD). SLI is the performance by a preschool child on a norm-referenced language test measured at least 1.5 standard deviations below the mean for children of the

same chronological age or whose speech, out of context, is unintelligible to a listener who is unfamiliar with the child. DD is the performance by a preschool child on a norm-referenced test that measures at least 1.5, but not more than 3, standard deviations below the mean for children of the same chronological age in two or more of the following developmental domains: cognitive, physical, communication, social or emotional, or adaptive. PSD is the performance by a preschool child on a norm-referenced test that measures more than 3 standard deviations below the mean for children of the same chronological age in one or more of the developmental domains. The results of the tests must be supported by information from a comprehensive developmental assessment to include parental input. As preschool children transition to kindergarten, the preschool category in which they were served is reviewed.

Preschoolers at Risk Due to Socioeconomic Status

The effects of poverty include the shortage of common needs such as food, clothing, shelter, and safe drinking water, all of which determine quality of life. The United States leads other industrialized nations in the number of children living in poverty, with a national child poverty rate of 22%. Forty percent of all young children in the United States live in low-income families, and 20% of these families survive with incomes less than the national poverty level (National Center for Children in Poverty, 2006). Since 2000, an additional 1.3 million children have fallen into poverty (Reid, 2006), which means the number of children currently living in poverty in the United States is approaching 16 million. One of every six children is poor, and one in every three children who are members of a racial minority group lives in poverty.

Preschoolers at Risk Due to English Language Learner Status

An English Language Learner (ELL) is a student whose first language is not English. As the nation's largest minority group, Latinos represent 14% of the U.S. population (U.S. Census Bureau, 2004). By 2030, Latinos will represent approximately one-fourth of America's early childhood population, with many facing the challenges of growing up in poverty and learning English in primarily Spanish-speaking households (National Task Force on Early Childhood Education for Hispanics, 2007). Tabors and Snow (2002) documented an achievement gap between White children and children from Spanish-speaking households. Many Latino children enter kindergarten scoring significantly below their same-age, White, English-speaking peers on measures of language and literacy (Garcia & Miller, 2008; National Task Force on Early Childhood Education for Hispanics, 2007; Vernon-Feagans, Hammer, Miccio, & Manlove, 2002).

Early Intervention

Special education laws were written to ensure young children with disabilities receive a free and appropriate public education in accordance with their individual needs (Individuals With Disabilities Education Act, 2004). Increases in the use of performance and accountability measures through the No Child Left Behind (NCLB) Act of 2001 have resulted in greater academic pressure for schools and for individual students at young ages (Silliman, Wilkinson, & Brea-Spahn, 2004). Through the Reading First and Early Reading First initiatives, NCLB mandates required state and local educational agency representatives to identify effective instructional approaches to learning and intervention based on scientifically based reading research (SBRR). Advocates of this skills-based

approach to reading identified the core knowledge and skills that young children must have to become successful readers (Snow et al., 1998). SBRR researchers have identified direct, explicit, and systematic instruction as the most effective strategy for teaching core literacy content to young children.

With these increased expectations came the widespread recognition that children arrive at the critical kindergarten juncture with variable states of readiness and that the quality of early learning experiences and environments has contributed substantially to that variability (Shonkoff & Phillips, 2000; Snow et al., 1998). Up to 40% of children enter kindergarten at least one year behind age-level peers in critical language and reading readiness skills. Preschool children who experience early reading difficulty are at increased risk for entering kindergarten without an adequate foundation for developing the higher-level literacy skills needed in school. For preschoolers facing educational challenges due to risk factors such as (a) developmental delays, (b) low socioeconomic status, or (c) learning English in Spanish-speaking homes, increasing early literacy skills has become vital to closing the achievement gap between them and their more advantaged peers (Klein & Knitzer, 2007).

The quality of children's experiences within preschool programs may play an important role in their development of academic, language, literacy, and social or emotional competencies that help prepare them to enter school ready to learn (Bronfenbrenner, 1986). A high-quality preschool is typically defined by two dimensions of quality: process and structure (Espinoza, 2002). The first dimension has been observed and rated as a measure of process quality. The second dimension includes the

size of each group of children, the adult–child ratio, and the education and training of the teachers and staff. Educators in high-quality programs have provided learning opportunities to promote positive development and prepare children for school, including exposure to new vocabulary and early mathematics concepts, positive peer interactions, and other rich learning opportunities (Dickinson & Smith, 2001; National Institute of Child Health and Human Development & Duncan, 2003; Neuman & Carta, 2011) that have been vital for children at risk for reading and school failure.

A clear relationship exists between the early attainment of emergent literacy skills and children's later achievements in skilled reading. Developing early, effective models of literacy interventions reduces the likelihood of later reading difficulties. Empirical studies on the effectiveness of early literacy interventions for young at-risk children have increased during the past decade (e.g., Chow & McBride-Chang, 2003; Justice & Ezell, 2002; Neuman & Roskos, 1993; O'Connor, Jenkins, Leicester, & Slocum, 1993; van Kleeck, Gillam, & McFadden, 1998; Whitehurst, G. J., Arnold, D. S., Epstein, J. S., & Angell, A. L., 1994). Researchers have demonstrated not only the value of early interventions for supporting literacy achievements in young at-risk children but also the advantages of such interventions for influencing later reading achievements. Early childhood professionals have been encouraged to take a proactive stance with respect to (a) identifying children at risk for early and later literacy problems and (b) structuring instructional intervention activities that efficiently and effectively optimize emergent literacy achievements. Justice and Pullen (2003) described three principles for early literacy prevention and intervention activities:

1. Intervention activities should include both written language awareness and phonological awareness. Educators should view emergent literacy as an integrated package encompassing diverse areas of knowledge and skills.

2. Intervention activities should include naturalistic, embedded opportunities for knowledge attainment as well as explicit exposure to key concepts. Emphasizing an explicit-embedded balance means engaging children throughout the day in child-centered, contextualized, meaningful literacy activities as well as providing regular, structured opportunities for teacher-directed, explicit exposure to key literacy concepts.

3. Intervention practices should be evidence-based to ensure the interventions delivered to young children effectively and efficiently increase emergent literacy knowledge. Early childhood educators should rely on evidence-based practices—the use of intervention strategies and procedures that have been rigorously studied to demonstrate efficacy or effectiveness with a specific or generalized population.

Systemic Early Literacy Intervention

The three studies comprising this dissertation include components of systemic early literacy interventions for young at-risk preschoolers. The overarching purpose of this dissertation was to examine best practice in providing systemic early literacy interventions as a protective factor against school failure for young at-risk children. Systemic early literacy intervention was defined for the purpose of this study as system-wide instructional processes focused on the interactions, influences, relationships, and impacts affecting stakeholders within the environment of the at-risk preschooler.

Systemic literacy intervention is a cyclical process in which the impact on all parts of the whole and their relationships to one another must be considered in the curricular, decision, and policy-making process (see Figure 1).
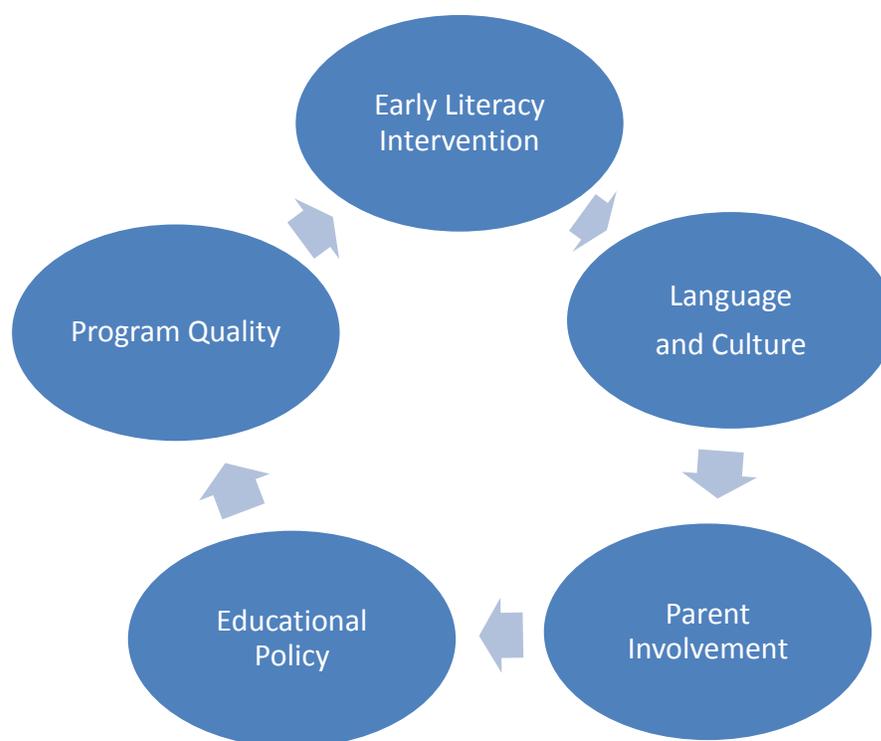
Figure 1. Relationships among components of Systemic Early Literacy Intervention.

Statement of the Problem

Up to 40% of children enter kindergarten at least one year behind age-level peers in critical language and reading readiness skills. Preschool children who experience early reading difficulty are at increased risk for entering kindergarten without an adequate foundation for developing the higher-level literacy skills needed in school. Acquiring early language and literacy skills is critical to success in school. For preschoolers facing educational challenges and at risk of educational failure due to risk factors such as (a) developmental delays, (b) low socioeconomic status, or (c) learning English in Spanish-

speaking homes, increasing early literacy skills has become vital to closing the achievement gap between them and their more advantaged peers. The quality of children's experiences within preschool programs has an important role in their development of academic, language, literacy, and social or emotional competencies that prepare them to enter school ready to learn. Few researchers have examined systemic early literacy interventions for young children who are at risk of reading and school failure due to (a) developmental delay, (b) low socioeconomic status, or (c) ELL status.

Purpose of the Study

Although the relationship between emergent literacy intervention and reading development is clear, the decision about which interventions are most successful is complicated by the limited empirical data confirming the value of specific intervention approaches (Goldberg, 2003). This research was conducted through the theoretical lens of sociocultural theory as the framework for early literacy skills development in real-life settings through positive interactions with literacy materials, other people, and environments. The author collected all data for the first and third manuscripts appended to this dissertation and analyzed data collected from the Discovering Intellectual Strengths and Capabilities While Observing Varied Ethnic Responses (DISCOVER) Project in the second manuscript appended to this dissertation. The dissertation author was solely responsible for the production of all three manuscripts.

Organization of the Study

The three studies included in this dissertation were viewed from a sociocultural perspective of researching early literacy interventions for children at risk of school failure

due to developmental or socioeconomic disadvantage. This dissertation consists of four

chapters and three appended manuscripts. The first chapter serves as the introduction to

the dissertation and early literacy interventions. Table 1 contains definitions of early

literacy terminology to ensure clarity. Definitions have been adapted from the listed

references. Terms without a listed reference were defined by the author. The second

chapter includes a review of research in early childhood education and early childhood

special education pertaining to early literacy. The third chapter is a summary of the

methods, participants, and results of the research manuscripts appended to this

dissertation. In the final chapter, the author discusses the findings from the three

manuscripts, with implications for early childhood leaders and practitioners and provides

recommendations for further research within the field of early literacy interventions.

Table 1

Definitions of Early Literacy Terminology

Term	Definition	Author(s)
At risk	Developing of emergent literacy skills more slowly than their peers and therefore more susceptible for later reading difficulties	Justice & Kaderavek (2004)
Early childhood	Child's age before the onset of formal schooling—five years in most nations	Bredekamp (1987)
Early childhood education	Formal teaching and care of young children by people other than their family or in settings outside of their home	Bredekamp (1987)

Note. Terminology has been defined for this dissertation to ensure clarity.

Table 1 *(continued)*

Term	Definition	Author(s)
Early literacy	The process of early literacy is to understand and to use language for functional communication	Roskos et al (2003)
Embedded-explicit literacy	The philosophy of synthesizing whole-language and phonological awareness to arrive at an intervention approach that is maximally efficient and effective for young at-risk children	Justice & Kaderavek (2004)
Functional communication	The process of oral form of language—comprised of listening and speaking—used before beginning to explore and implement the written form of language	Robinson (2013)
Emergent literacy	Behavior of young children when using books and writing instruments to imitate reading and writing activities	Alexander & Slinger-Constant (2004)
High-quality preschool	Rated as a measure of process quality based on interactions, activities, materials, learning opportunities, health and safety, adult-child ratio and education and training of teachers and staff	Espinoza (2002)
Parent involvement	Participation of parents in regular, two-way, and meaningful communication involving student academic learning and other school activities	Epstein (2002)
Scientifically based reading research	Identified as direct, explicit, and systematic instruction for teaching core literacy content to young children	Snow et al., (1998)

Note. Terminology has been defined for this dissertation to ensure clarity.

CHAPTER 2

LITERATURE REVIEW

The purpose of this chapter was to examine existing research pertaining to early literacy interventions for children in at-risk populations through a sociocultural lens in order to examine the value of specific intervention approaches. The author also provided an analysis of the strengths and weaknesses of literature included in this dissertation using special education quality indicators to determine effective practice.

Literature Search Procedures

A search for empirical articles was conducted using the search engine EBSCOhost and three abstract and index databases (Academic Search Complete, Educational Resources Information Center, and PsycINFO). The empirical studies pertained to early childhood literacy interventions for children at risk of school failure due to low socioeconomic status, developmental delay, or ELL status. Articles were located based on keyword searches and footnote research. Keywords included *early literacy, emergent literacy, early interventions, preschool interventions, poverty, developmental disabilities, English language learners,* and *at-risk populations*. To expand the number of articles found, *emergent literacy* and *preschool interventions* were included, resulting in 36 articles. Recurring themes of literacy intervention studies and language, literacy, and culture were found in the research. Figure 2 is a literature map of the manuscript search. The selected articles were published in journals across disciplines, including special education, speech-language therapy, early childhood education, and school psychology.

The 11 articles selected for this review were evaluated based on quality indicator standards and the following criteria:

1. Studies included single-subject, quantitative, or mixed-methods research designs.

2. Studies included preschool children ages 3-5 at risk of school failure due to low socioeconomic status, ELL status, or developmental delay.

3. Studies included students who received an early literacy intervention.
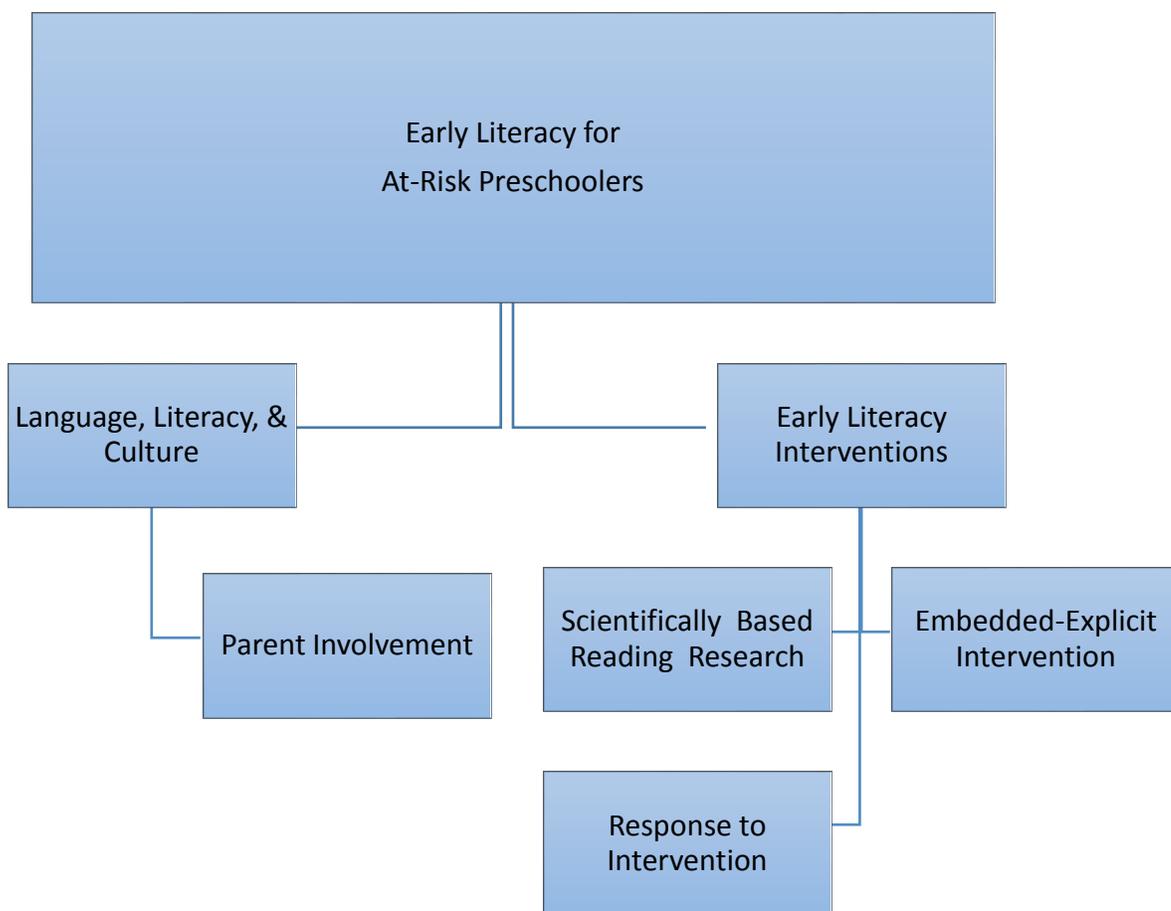
Figure 2. Literature intervention research map for young at-risk children.

Quality Indicators for Special Education Research

The rationale for different research methodologies in special education has been based on the conceptualization of research in education and the complexity of special education as a field. The history and tradition of special education research—when employing multiple methodologies—has resulted in identifying effective practices when conducting and analyzing research (Odom, Brantlinger, Gersten, Horner, Thompson, & Harris, 2005). Special education quality indicators and guidelines were used to determine effective, evidence-based practices among the different methodologies in the research to evaluate the research and to organize critical issues within the research. Pirtle (2012) developed a table of descriptors adapted from the quality indicators used to evaluate research in special education (see Table 2). The use of evidence-based practices is indicated in group experimental, single-subject, correlational, and qualitative special education research methodology (Brantlinger, Jimenez, Klinger, Pugach, & Richardson, 2005; Gersten, Baker, Haager, & Graves, 2005; Horner et al., 2005; Thompson, Diamond, McWilliam, Snyder, & Snyder, 2005). The research included in this review was critiqued by the presence or absence of quality indicators for the special education methodology used to conduct the research (see Table 2). A summary of the articles included in this review can be found in Table 3. A summary of quality indicators for this review has been provided in Table 4.

Review of Early Literacy Intervention Research

A review of the 11 early literacy intervention articles included in this review was conducted to examine best practice in the implementation of preschool interventions.

Table 2

Summary of Quality Indicators for Special Education Research

	Special education research methodology			
Quality indicator	Experimental	Single-subject	Correlational	Qualitative
Participant and setting	X	X		X
Intervention	X			
Document analysis				X
Dependent variables	X	X		
Independent variables		X		
Data collection	X			
Fidelity of implementation	X	X		
Baseline		X		
Experimental control		X		
Data analysis	X			X
Measurement			X	
External validity		X		
Significance			X	
Confidence intervals			X	
Social validity		X		X

Note. Adapted from *Collaboration Among Families, Educators, and Medical Professionals to Create a Rural Medical Home for Children with Special Health Care Needs and Disabilities* by J. M. Pirtle, 2012.

Table 3

Summary of Early Literacy Intervention Research

Citation	Participants	Purpose	Method	Results
(2009) Bailet, Peista, & Repper	220 children identified as at risk for reading failure	To examine effectiveness of an assessment and intervention targeting pre-kindergarten children at risk for reading failure	Hierarchical linear model	Significant treatment effects were found on two of four outcome variables (rhyming and alliteration) and significant dosage effects on all four variables.
(2008) Bernhard et al.	280 children in 32 experimental group centers and 87 children in 9 similar control group centers	To evaluate the utility a 12-month early literacy intervention emphasizing highly meaningful language interactions	Mixed methods design	Children receiving the intervention made significantly greater gains than the control group specifically on the child language measures but not on other measures.
(2008) Elliott & Olliff	20 preschool children enrolled in mixed-age classroom	To explore phonemic awareness with preschool English language learners	Experimental design	A developmentally appropriate early literacy curriculum was used to focus on emergent literacy and letter recognition skills with most children demonstrating gains in skills.

Note. Early literacy experimental, single subject, correlational, and qualitative research are summarized.

Table 3 *Continued*

Citation	Participants	Purpose	Method	Results
(2010) Fluckiger	Culturally diverse children in Australia	To examine the ways in which children negotiated culture and literacy	Mixed method design	Constructs of culture-switching were developed by group whose members encountered differing social and cultural contexts.
(2010) Gajus & Barnett	24 Head Start students	To increase children's early literacy skills	Experimental design with response to intervention	Classroom improvements were made for letter naming fluency.
(2012) Gettinger & Stoiber	124 Head Start students	To provide a descriptive study of the use of curriculum-based early literacy assessment	Experimental design with response to intervention	Students in experimental classrooms in which curriculum-based progress monitoring and differentiated instruction were implemented performed higher than students in control classrooms.
(2012) Greenwood et al.	644 preschoolers enrolled in typical classrooms	To research whether preschool instructional experiences are sufficiently effective to achieve language and early literacy goals	Descriptive, process-product design	Gaps due to socioeconomic status differences were not reduced in initial early literacy skills. Basic classroom instruction quality remained low and variable.

Note. Early literacy experimental, single subject, correlational, and qualitative research are summarized.

Table 3 *Continued*

Citation	Participants	Purpose	Method	Results
(2012) Phillips & Meloy	Pre-K children enrolled in a state school program	To estimate the effect of pre-K program participation for children with special needs	Quasi-experimental design (regression discontinuity)	Achievement test scores of children with IEPs were not significantly different from their typically developing classmates.
(2008) VanDerHeyden, Snyder, Broussard & Ramsdell	35 at-risk preschoolers	To examine curriculum based early literacy measures	Experimental design with response to intervention	Progress monitoring combined with early literacy interventions was correlated to accelerated growth toward targeted goals.
(2012) Vukelich, Justice, & Han	99 at-risk preschoolers	To explore different grouping configurations in a supplemental tutoring program for at-risk preschoolers	Experimental design	Children in both conditions made similar gains on the alphabet knowledge and phonological awareness measures and the one-on-one group outperformed the paired group on receptive vocabulary.
(2008) Winsler et al.	1478 preschoolers qualifying for free or reduced lunch	To examine school readiness gains by children attending Head Start	Experimental design with repeated measures MANOVAs	Low income children benefited slightly more in language and cognition from public school pre-k programs, in which specific curriculum targeted these areas.

Note. Early literacy experimental, single subject, correlational, and qualitative research are summarized.

Table 4

Summary of Quality Indicators for Early Literacy Intervention Research

Quality Indicator	Early Literacy Intervention Research										
	(2009) Bailet, Peista, & Repper	(2008) Bernhard, et al	(2010) Fluckiger	(2010) Gajus & Barnett	(2012) Gettinger & Stoiber	2012) Greenwood et al.	(2008) Elliott & Olliff	(2012) Phillips & Meloy	(2008) Winsler et al.	(2008) VanDerHeyden et al.	(2012) Vukelich, Justice, & Han
Participant and Setting	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intervention	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Data Collection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Implementation Fidelity	No	No	No	Yes	No	No	No	No	No	No	No
Baseline	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Data Analysis	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Validity	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No

Note. Adapted from *Collaboration Among Families, Educators, and Medical Professionals to Create a Rural Medical Home for Children with Special Health Care Needs and Disabilities* by J. M. Pirtle, 2012.

All researchers employed an experimental, quasi-experimental, or mixed methods research design. Researchers included students who were identified as at-risk of school failure due to developmental delay (Phillips & Meloy, 2012; VanDerHeyden, Snyder, Broussard, & Ramsdell, 2007; Vukelich, Justice, & Han, 2012), low socioeconomic status (Gettinger & Stoiber, 2012; Greenwood et al. (2012); Bailet, Peista, & Repper, 2009; Bernhard et al., 2008) or English language learners (Duran, Roseth, & Hoffman, 2009; Elliott & Olliff, 2008; Winsler et al., 2008) with some overlapping categories.

The studies were conducted in varied preschool environments, with five studies occurring in public preschool programs, three occurring in Head Start programs, and three taking place in multiple center-based sites. In all of the research, literacy skills were the dependent variable. Scientifically Based Reading Research (SBRR), Embedded-Explicit Research, and Response to Intervention (RTI) methods were the independent variables used to conduct the early literacy intervention studies reviewed.

A significant finding of this research review was that all interventions resulted in an increase in preschoolers' early literacy skills. Although different intervention methods and curricula were used, all researchers focused on improving the early literacy skills of letter identification, vocabulary development, print awareness, and phonological awareness. Interventions were most effective on the early literacy skills of letter identification and vocabulary development, although the effect was consistently small.

Sociocultural Lens

Vygotsky (1978) theorized that learning occurred as a result of social interactions and context influences that were imitative—where one person imitated another,

instructive—learning the instructions of another, or cultural—tools learned through collaborative interaction with a more knowledgeable person. As additional ethnically diverse, native born, and immigrant students enter classrooms with social and learning practices that might operate under different assumptions and cultural norms than the assumptions and norms that characterize school-based literacies, culture has become central to learning. Culture has a role not only in how information is communicated and received but also in how individual and group thinking processes are shaped. Children are required to enter school systems with literate practices acquired within dynamic cultural systems with structure, roles, scripts (alphabetic, pictographic), modes of reasoning, and tools. People from different cultures may learn in different ways with different learning expectations. Children from homes in which the language and culture do not closely correspond to those of the school may be at a disadvantage in the learning process and often become alienated and feel disengaged from learning.

Preschool may be the first environment in which children systematically face dominant sociocultural values and are expected to abide by them (Souto-Manning & Mitchell, 2010). Children who are from culturally and ethnically diverse backgrounds are often expected to learn in different cultural contexts than those they have experienced in their families, homes, and communities (Lahman & Park, 2004). Upon entering preschool, young children are often expected to immediately engage in cultural practices that may differ from those at home in order to be conceptualized as successful, ready to learn, or capable (Gregory et al., 2004; Souto-Manning, 2009).

All of the research was viewed through a sociocultural lens of instructive interactions. Vulkelich, Justice, and Han (2012); Fluckiger (2010); Bernhard, Winsler, Bleiker, Ginieniewicz, and Madigan (2008); and Bernhard et al. (2008) drew on family and cultural experiences and knowledge to create preschool environments that connected classroom literacy practices with students' home and community cultures, specifically examining the effects of cultural and peer interactions on early literacy skill gains. Consistent with Vygotsky's (1978) theory, cultural tools influenced learning in that indigenous literacy activities were emphasized and young children who encountered differing social and cultural contexts often developed constructs of culture-switching. Culturally diverse families acknowledged aspects of the dominant culture while preserving their own and encouraged their children to adopt practices of the preschool they attended. These practices included speaking English at preschool, negotiating their participation in activities, and demonstrating independence. In this way, the children acquired the cultural capital perceived as requisite for educational success at preschool while maintaining the practices and beliefs of their heritage culture at home.   Parents developed knowledge of the dominant culture through their children's experiences.

Family involvement. Family involvement was a vital component of the literacy interventions. Fluckiger (2010); Bernhard, Winsler, Bleiker, Ginieniewicz, and Madigan (2008); and Bernal (2008) demonstrated that use of the home language can help to empower families and children to design and implement authentic, culturally relevant literacy practices. The intervention foci were to improve early childhood skills in print awareness, text comprehension, and phonological awareness through the social and

cultural context of emergent literacy by participating in culturally relevant literacy experiences within the classroom. Early childhood education teachers and parents were provided with the knowledge and materials to facilitate age-appropriate literacy activities, including writing, self-publishing, and other book-making activities.

Scientifically Based Reading Research in Early Literacy Intervention

Scientifically Based Reading Research (SBBR) intervention methods were used in five of the studies reviewed. Researchers using SBBR methods (Bailet, Repper, Piasta, & Murphy, 2009; Duran, Roseth, and Hoffman (2009); Elliott & Olliff, 2008; Phillips & Meloy, 2012; Winsler et al., 2008;) examined an approach for reducing the reading achievement gap evident in preschoolers who exhibited delays in acquiring critical early literacy skills and provided experimental, targeted educational interventions to prepare these students more effectively for formal reading instruction in kindergarten and early elementary school. SBBR includes research that entails rigorous, systematic, and objective procedures to obtain valid knowledge relevant to reading development, reading instruction, and reading difficulties.

Researchers using SBBR intervention methods commonly included language and literacy activities grounded in SBRR that supported age-appropriate development of oral language, phonological awareness, print awareness, and alphabetic knowledge. Instruction was delivered in small groups and designed to measure intervention effects for students' gains in rhyming, alliteration, picture naming, print, and letter knowledge skills. A significant finding of this research was that as children received more direct

interventions—on average—they gained more in their phonological awareness, vocabulary, and letter knowledge skills.

Winsler et al. (2008) and Duran, Roseth, and Hoffman (2009) used SBBR to examine bilingual language instruction with English Language Learners' literacy development. Implementation of the interventions were similar to preschoolers receiving instruction in English as were the findings in that at-risk preschoolers demonstrated gains in vocabulary and letter identification measures. It is interesting to note that the constructs of culture switching were developed during the literacy experiences for children who encountered differing social and cultural contexts between their home and school environments.

Although the research included in this review was determined to be effective and evidence-based by the inclusion of at least 80% of the quality indicators for special education experimental or quasi-experimental or mixed-methods design, only two articles (Bailet, Peista, & Repper, 2009; Duran, Roseth, & Hoffman, 2012) included an assessment of the fidelity of implementation for the intervention. Implementation fidelity refers to the degree to which an intervention is delivered as intended. An evaluation of the fidelity with which an intervention has been implemented provides a viable assessment of its contribution to the effect on performance. The researchers' lack of treatment fidelity formation may lead to potentially false conclusions being drawn about the interventions effectiveness.

Embedded-Explicit Early Literacy Interventions

Embedded-Explicit literacy methods were used to determine the relative efficacy of an experimental explicit-emergent literacy intervention program for preschoolers experiencing multiple risk factors in three of the articles reviewed for this analysis. The Embedded-Explicit intervention model offered a balanced approach to teaching early literacy skills to young children by giving them socially embedded opportunities for meaningful, naturalistic literacy experiences, as well as direct instruction targeting critical emergent literacy goals. As a result of examining the needs of their students, teachers adapted the program to younger participants, which may have affected intervention fidelity. Researchers implemented an integrated delivery model of directed, contextualized interactions with oral and written language embedded throughout the preschool day, with a focus on instructor-directed interventions to target skills explicitly linked to early literacy and reading readiness.

Using differing curricular programs, researchers' focus included six essential elements of instruction: read-alouds, independent reading, oral language, phonological awareness, letter knowledge, and print concepts. Bernhard et al. (2008) and Elliot and Olliff (2008) differed by providing a home-based family component. Families were informed of their child's progress in acquiring emergent literacy skills and provided home activities for advancing children's knowledge and skills.

The research conducted using Embedded-Explicit intervention methods was determined to include at least 80% of quality indicators for special education research. It is interesting to note that although using a balanced approach to providing early literacy

instruction was useful, children demonstrated gains in print awareness rather than specific early literacy skills.

Response to Intervention in Early Literacy

This review included four studies with researchers implementing a Response to Intervention (RTI) approach to early literacy intervention (Gajus & Barnett, 2010; Gettinger & Stoiber, 2012; Greenwood, 2012; VanDerHeyden, Snyder, & Ramsdell 2007). The educational shift toward implementing an RTI model has been consistent with the current focus on prevention and early intervention for preschool children (VanDerHeyden & Snyder, 2006). Inherent to an RTI approach has been the practice of providing high-quality instruction and supplemental differentiated support through a multi-tiered intervention hierarchy. RTI models include four common elements: (a) screening, (b) using tiered levels of evidence-based, high-quality instruction, (c) ongoing monitoring of progress, and (d) basing decisions about the delivery of instruction on progress-monitoring data (Fuchs & Fuchs, 2006). Effective implementation of an RTI approach was based upon the use of progress monitoring so that teachers were able to provide focused instruction and individualized support when delays were evident.

All of the studies implementing a RTI approach were conducted in inclusive preschool learning environments for typically developing and developmentally delayed students (Head Start or public school preschool programs). All researchers documented the benefits of using curriculum-based, progress-monitoring data and differentiating instruction to improve early literacy outcomes, Greenwood 2012; (ELL students) and Van DerHeyden, Snyder, and Ramsdell 2007; (developmentally delayed students) found

that ELL students—many identified as requiring Tier 2 and Tier 3 supports— made

greater gains in vocabulary acquisition of all children, perhaps due to the more intensive

intervention provided. Consistent throughout the research, to effectively inform

curricular decision making within an RTI framework, early identification, assessment,

and intervention procedures must be aligned so that curriculum-based measures reflect

classroom learning that occurs in response to targeted intervention and can predict future

intervention needs. Particularly for children who were initially lower performers,

progress monitoring combined with brief class-wide interventions has shown promise for

enhancing decision accuracy and monitoring growth towards early literacy targets. In

applying RTI to early literacy skill development, teachers used scientifically based

practices and systematically adapted their instruction as needed; interestingly,

curriculum-based assessment probes were administered by teachers in only one of the

studies reviewed (Gajus & Barnett, 2010).

The RTI intervention studies included in this review met 90% of the criteria for

evidence-based practice as indicated by quality indicators. Gajus and Barnett (2010) met

100% of quality indicators. The authors' inclusion of the accountability design and Inter-

Observer Agreement— elements often used in single-subject research design to

determine whether a change in behavior occurred rather than specifically arguing internal

validity for an intervention—strengthens the significance of the intervention effects.

Intervention Service Delivery Setting

Several researchers differed in comparing the service delivery setting in which the

preschooler received the intervention. Greenwood et al. (2012) and Winsler et al. (2008)

found that school readiness gains were moderated by whether the intervention setting was in a Head Start, public preschool, or fee-based program. Although gains were made in all programs in both English and Spanish language of instruction, there were significant differences across programs for children from lower socioeconomic levels placed in public preschools.

CHAPTER 3

PRESENT STUDY

The methods, participants, and results of the three studies comprising this study are summarized in this chapter. The complete manuscripts are provided in Appendices A, B, and C.

The Kindergarten Connection: Evaluation of a Summer Literacy Program for Preschool Special Education Students Entering Kindergarten

In this study, the hypothesis that a positive relationship existed between participation in a reading readiness program to provide direct, explicit instruction in early literacy skills and reading success in kindergarten for previous preschool special education students. The Kindergarten Connection was situated within the context of Scientifically Based Reading Research in early literacy intervention (see Figure 3). Mean differences in early literacy skills were compared for preschool special education students who attended a summer literacy program for students moving to kindergarten in the fall and preschool special education students who attended the summer program. The following question guided the research: Does participation in a reading readiness intervention program for preschool special education students who subsequently attended a kindergarten class for typically developing students increase early literacy scores in (a) phonemic awareness, (b) alphabetic principles, and (c) vocabulary knowledge?
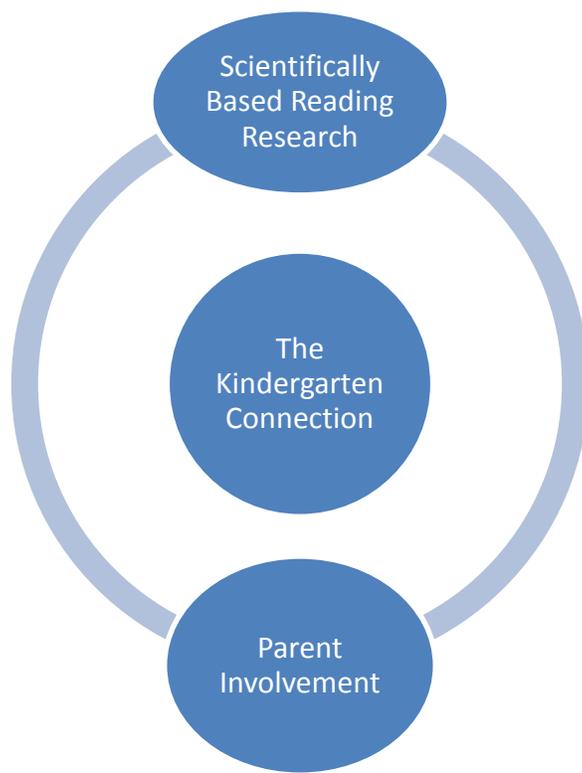
Figure 3. Research Study: The Kindergarten Connection

Method

The first study examined kindergarten literacy scores for Summer Opportunity for

Academic Readiness (SOAR) participants and Dynamic Indicators of Basic Early

Literacy Skills (DIBELS) benchmark data for participant and comparison groups.

Random selection was not possible in this study so a quasi-experimental design was

implemented. Students' DIBELS scores were analyzed using an independent samples *t*-

test to compare the differences between mean scores of participants and comparison

groups. The early literacy needs of diverse young learners were addressed by

implementing a systemic approach in an inclusive preschool environment by (a)

providing a comprehensive literacy based program of instruction to children at risk of

educational failure; (b) providing ongoing teacher professional development and mentoring opportunities; and (c) coordinating a family, school, and community partnership.

Intervention. Project SOAR was a grant-funded developmentally appropriate summer literacy program for preschool students with special needs who were preparing to attend kindergarten. The curriculum was developed from the state's Early Learning Standards for kindergarten with a reading focus, which included (a) phonemic awareness, (b) vocabulary knowledge, (c) letter and sound recognition, and (d) text comprehension. Instruction was provided in English with Spanish language support. The program was staffed by two preschool teachers, one kindergarten teacher, and four teaching assistants. Parent education sessions were conducted weekly, with emphasis on kindergarten learning expectations. Parents also participated in discussions and activities in the targeted reading areas. Home-learning activity packets were sent home for parents to use with their children.

Participants. Participants resided in an urban school district in the southwestern United States. The percentage of students identified as minority was 94.4%. Specifically, the ethnic make-up of the student body was 87.7% Hispanic (14,804), 5.6% White (952), 4.1% Native American (687), 2.1% (353) African American, and 0.5% (91) Asian American. One hundred twenty-eight children met the requirements for participating in the intervention program. They were beginning their kindergarten school year without receiving special education services, receiving speech resource services only, or with a 504 special education accommodation plan. All participants and non-

participants were recommended by their classroom teachers for the intervention program. One hundred three students (32 girls, 71 boys) attended the program. Twenty-five students were unable to participate due to parents' work schedule, the parent-training requirement, or a parent's inability to provide transportation.

Data Collection and Analysis

Early literacy assessments were administered to determine mean differences between intervention participants and non-participants using a formative kindergarten assessment tool and Dynamic Indicators of Basic Early Literacy Skills (DIBELS).

Kindergarten assessment. Participating students were administered pre-intervention and post-intervention formative kindergarten assessments in phonemic awareness, initial sound identification, letter recognition, classification, and story elements. Phonemic awareness was assessed by requiring students to produce rhyming words orally in response to spoken words, to blend spoken phonemes to form a single-syllable word, and to segment one-syllable words into phonemes. After initial sound identification was assessed, students were required to identify the initial and final sounds (not the letter) of a spoken word. Students were required to identify capital letters of the alphabet to assess letter recognition. Classification skills were assessed by requiring students to sort familiar words into basic categories (colors, shapes, foods, and animals). Story elements were assessed by requiring students to identify characters, settings, and key events to sequence story events.

DIBELS. Students' DIBELS benchmark assessment data were obtained from the school district's database for SOAR participants and non-participants. The students were

administered DIBELS assessments three times during the school year (August, December, and April) from kindergarten through third grade by trained school faculty. Data from the beginning, middle, and end of the kindergarten year were reviewed to determine early literacy skills acquisition and the necessity of additional intervention services. Students' DIBELS scores were analyzed using quantitative software to conduct an independent samples t-test comparison of mean differences between participants and the comparison group (eligible, invited non-participants).

Results

Data from early literacy assessments were analyzed to determine mean differences between intervention participants and non-participants using a formative kindergarten assessment tool and DIBELS.

Kindergarten assessment. Year 1 participating students were administered pre-intervention and post-intervention formative kindergarten assessment in phonemic awareness, initial sound identification, letter recognition, classification, and story elements. Pre-post intervention assessment data were completed for 18 students. Thirty-nine percent of SOAR participants ($n = 7$) demonstrated an increase in phonic awareness; students were able to distinguish rhyming word pairs, to identify initial sounds of a spoken word, and to segment one-syllable words into phonemes. All SOAR participants ($n = 18$) demonstrated an increase in alphabetic principles. Seventy-two percent of SOAR participants ($n = 13$) demonstrated an increase in vocabulary skill through their ability to sort familiar picture words into categories.

DIBELS. SOAR participant and non-participant DIBELS normative data were collected and analyzed using an independent samples *t*-test to examine the mean differences between groups. DIBELS data for all three early literacy domains were available for 86 students attending district elementary schools. In phonemic awareness, SOAR participants exhibited lower scores on average (*M* = 31.07, *SD* = 16.93) than non-participants. The difference in scores for participants and non-participants was not statistically significant at the .05 level (*t* [84] = -.251). The magnitude of the differences in the means (mean differences = -1.18, 95% CI [-10.52, 8.16]) was a small effect (Cohen's *d* = - .07). In alphabetic principles, SOAR participants exhibited on average lower scores than non-participants. Statistically significant differences were not found (*t* [84] = .507). The magnitude of the differences in the means (95% CI [- 10.62, 5.28] was a small effect (Cohen's *d* = - .26). In vocabulary word use fluency, SOAR participants exhibited higher scores on average than non-participants. The difference was statistically significant (*t* [84] = .049). The magnitude of the differences in the means (mean differences = 9.58, 95% CI [.03, 19.13]) was a medium effect (Cohen's *d* = 55).

Literacy Connections: Linking Preschool to Language and Cultural Competencies in Navajo Kindergarteners' Drawings

The second study was situated within the context of literacy, language, and culture (see Figure 4). The purpose of this study was to examine the influence of prior preschool attendance, culture, and language socialization on early literacy success in prewriting skills for kindergarten students at risk of school failure due to low socioeconomic status by answering the following questions:

1. What were the differences and similarities between the drawings of

   kindergarten children who attended a preschool and those who did not?

2. What were the differences and similarities between the dictated stories of

   kindergarten children in a dual-language immersion program and those in

   English-only programs?
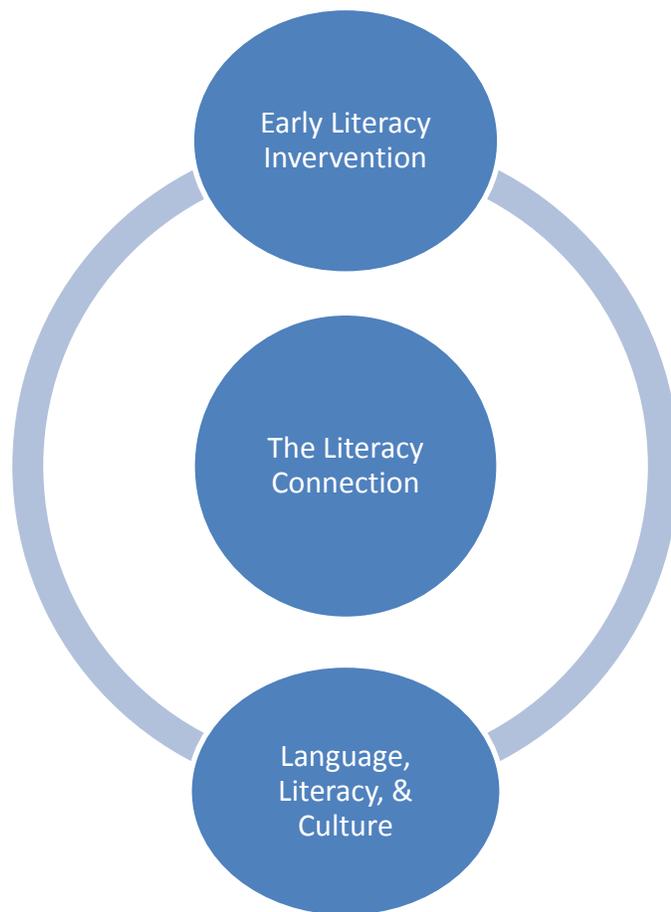
Figure 4. Research Study: The Literacy Connection

Method

A qualitative comparative research design was implemented using secondary

document analysis. Babbie (1997) defined document or content analysis as the study of

recorded human communications. Document analysis has been a way to systematically examine instructional documents with a focused, critical analysis rather than simple description, enabling the researcher to obtain the language and words of participants. Qualitative data analysis provided a unique opportunity to study the raw materials of the past to gain insights for both methodological and theoretical purposes. Drawings have allowed researchers to compare values across cultures, ages, and genders and to elicit more open-ended expressions than they might otherwise achieve through traditional surveys (Stiles, Gibbons, & Schnellmann, 1987). For this study, differences and similarities in drawings and dictated stories were compared as secondary archival data.

Intervention. The DISCOVER summer enrichment program (Maker, 1987) was a one month program with a bilingual education model. An English-language teacher and a Navajo-language teacher taught 40 children in morning and afternoon sessions. Teachers involved in the project received professional development related to curricular objectives and methods on an individual, small-group, and large-group basis.

The DISCOVER teaching methods and curriculum included the integration of language development in two languages using whole literacy, problem solving in a multicultural context, multiple intelligences abilities development, and individual student decision making. Curricular and teaching strategies were characterized by (a) integrated, interdisciplinary content; (b) higher order thinking, appropriate pacing, self-directed learning, and complex problem-solving processes; (c) development of unique products for real audiences; and (d) student interaction, interaction with experts, and learning environments with physical and psychological flexibility, openness, and safety.

DISCOVER educators promoted rich learning environments, including allowing students to make choices based on interest and ability. Teachers were resources rather than dispensers of knowledge (Maker, 1982; Maker & King, 1996; Maker & Nielson, 1995, 1996). The DISCOVER assessment was an authentic method to characterize individual patterns of growth and development. It included observations, anecdotal records, checklists, portfolios, and play-based assessment. A profile of multiple intelligences strengths was created for each child; both parents and teachers learned how to use the child's strengths in developing needed academic skills and creativity.

Participants. All participants were Navajo kindergarteners in a rural setting. Participants in Group A were chosen from a school located in the middle of the Navajo Nation Reservation in the southwestern United States. Participants were 30 purposefully selected kindergarten students who had attended the community-controlled Navajo Reservation School. The school district provided a dual-immersion, Navajo bilingual language program. Students attended a one month prekindergarten summer school program based on the DISCOVER model prior to attending kindergarten.

Participants in Group B were 35 purposefully selected kindergarten students from a Navajo Reservation boarding school controlled by the Bureau of Indian Affairs (BIA) located in the heart of the Navajo Nation. Due to geographical distance, elementary students attended the BIA boarding school. Students did not attend public preschool.

Data Collection and Analysis

Data were collected by obtaining students' archived drawings during the kindergarten school year. The drawings were completed during the process of assessing

children's giftedness and multiple intelligence strengths. Children drew pictures and told a teacher about them. The children then dictated their stories as the teacher wrote their exact language on or near the page with the picture. Children also were allowed to write their own stories using invented spelling. Recording children's exact language allowed a realistic assessment of each child's abilities.

Creswell (2009) found that the process of data analysis involved making sense out of text and image data. The following steps were used to analyze and compare kindergarteners' drawings and dictated text for differences and similarities:

1. Data were organized and prepared by sorting and arranging stories and drawings into categories based on independent variables.

2. Data were reviewed to obtain a general sense of the information and to reflect on the overall message.

3. A detailed analysis was conducted to organize and analyze the data, segmenting images, sentences, and words to derive meaning.

4. A coding process was employed to generate a description of themes for analysis. Themes were used to code findings in participants' drawings and dictated stories.

5. Descriptions and themes were represented in a narrative format.

Results

Similarities were evident in the sociocultural influences reflected in the subject content of drawings by Navajo children who had attended preschool and those who had not. Navajo kindergarteners were inspired by events occurring outside of the school

setting and included topics such as landscapes and homes, people, and animals. Navajo children were influenced by traditional Navajo images and predominantly drew representational images of homes, mesas, and animals. Sociocultural influences were representative of the traditional Navajo way of learning from observation and imitation (Kravagna, 1971). This practice was reflective of Vygotsky's (1978) theory of social interaction, in which culture, peers, and adults influenced the developing child. Children gain ideas from one another when sitting together to draw. Several Navajo kindergarten drawings and stories were nearly identical. Pahl (1999) found that children often copied each other and children working together often shared ideas. Peer teaching and copying is highly regarded in Navajo culture, with children learning from one another and gaining an early sense of independence from adults.

Embedded-Explicit Teaching in Early Literacy with At-Risk Students

The purpose of the third study was to demonstrate a functional relationship between the intervention and subjects' alphabet knowledge. An embedded-explicit teaching method was used to increase the early literacy skill of alphabet letter recognition in preschool children at risk due to developmental or economic disadvantage. The single subject, multiple-baselines, across-subjects design was in a Response to Intervention (RTI) format (see Figure 5). Inherent to an RTI approach has been the practice of providing high-quality instruction and supplemental differentiated support through a multi-tiered intervention hierarchy. The following question guided the research: Does an embedded-explicit teaching model increase the critical emergent literacy skill of

alphabet recognition in preschool children at risk due to developmental or economic disadvantage?
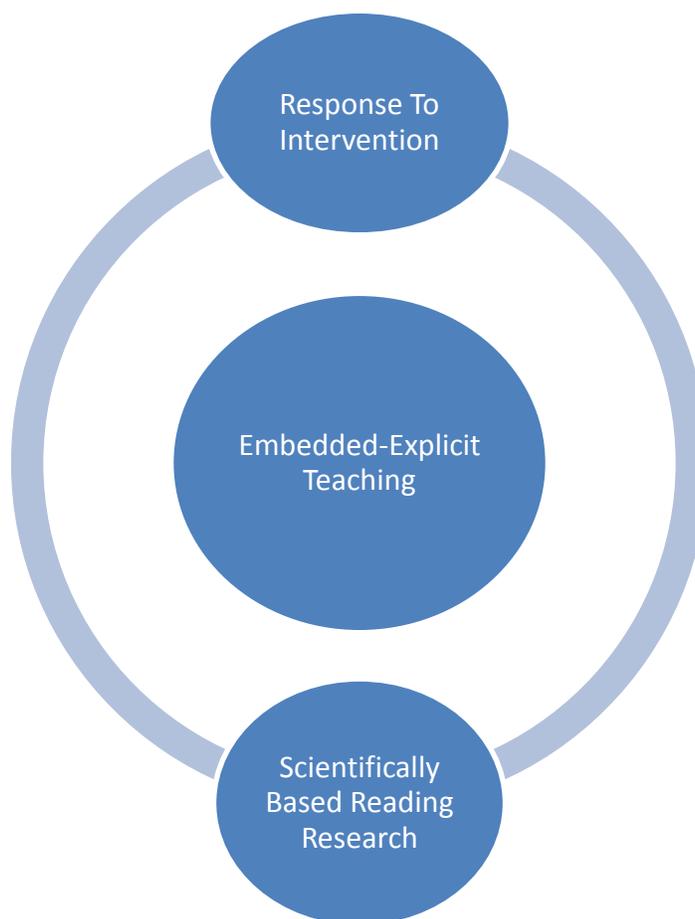
Figure 5. Research Study: Embedded-Explicit Teaching in Early Literacy with At-Risk Students

Method

A multiple-baseline across-subjects design was used to evaluate the effectiveness of the embedded-explicit intervention model in increasing alphabet letter recognition across the three participant groups, and to demonstrate a functional relationship between the intervention and subjects' alphabet knowledge. A multiple baseline design was

chosen to facilitate observation of the effects of the intervention as it was not feasible to withdraw or reverse learning students' gains from the intervention.

Intervention. The independent variable was operationally defined as an embedded-explicit model of early literacy intervention. The embedded-explicit model of intervention was implemented as a multi-tiered intervention organized to provide increasingly intensive tiers of intervention to children. Curriculum-based literacy probes were administered to assess children's ongoing progress. The embedded component required children's participation in high-quality daily opportunities for naturalistic, meaningful, intentional, and highly contextualized interactions with oral and written language. The first tier consisted of explicit whole-class instructional opportunities, as well as embedded learning opportunities for all children in the classroom. Children were engaged in contextual, developmentally appropriate learning activities such as (a) reading and writing children's names, (b) using alphabet manipulatives, and (c) exposure to alphabet books and environmental print. Tier 2 instruction was provided in small groups by classroom teachers to children requiring additional learning opportunities or differentiated instruction because they were identified as below age-level expectations. Specific instruction was based on curriculum-based assessment data and included multisensory activities designed for students to identify letters by shape, name, and sound. Tier 3 intervention was provided to children who did not respond to first-tier whole-class learning opportunities or second-tier small group intervention. The third tier required the use of focused, directed, and differentiated individual intervention to explicitly target identifying and naming letters.

The dependent variable was operationally defined as the emergent literacy skill of alphabet recognition. Alphabet recognition was defined as demonstrating knowledge of the distinctive features and names of the 26 individual letters in both upper- and lower-case formats. Correct identification was defined as the participant responding verbally within five seconds after receiving the visual cue (letter).

Participants. The study was conducted in two preschool inclusive, multiage classrooms based on Title I eligibility, early childhood special education qualification, and/or fee-based programs with an average class size of 14 children. Participant A and B received preschool services in one classroom, and Participant C received preschool services in a second classroom. Each preschool classroom was staffed by a public school teacher certified in early childhood education with support from an early childhood special education teacher and at least one paraprofessional teaching assistant. A speech language therapist provided language services to students in the classroom as indicated.

The subjects in this study were three children ranging in ages from 3.9 to 4.5 years who were receiving preschool services from a public school early learning center. The children's level and rate of literacy learning were below that of their classroom peers. Participants were identified as developmentally delayed in the communication domain and exhibited delays in acquiring literacy skills in comparison to peers as measured by standardized data from the Preschool Language Scale–Fourth Edition (PLS-4) and the Developmental Assessment of Young Children. The children received speech language therapy as required. Participants received partial-day preschool services (10

hours per week) in a developmentally appropriate, early childhood center that served children from birth to 5 years of age and all abilities in an inclusive environment.

Data Collection and Analysis

The RTI model was organized to provide increasingly intensive tiers of interventions to children. During the baseline phase, embedded literacy instruction was provided to all children in the classroom. During the intervention phase, small-group or one-to-one instruction was provided as a second tier to children requiring additional learning opportunities. Within the first tier of intervention, curriculum-based literacy probes were administered to assess children's ongoing progress and to determine progress in the second tier. Informal curriculum-based assessment was used to probe children's response to treatment in the first tier of intervention. Informal probes were used to determine children's alphabet identification knowledge. Data were collected using an alphabet identification sheet, with the teacher circling each correct response within a 10-second wait time. Students were presented with an alphabet identification sheet and asked to name or identify each letter. Data were collected using an alphabet identification sheet from the Creative Curriculum Developmental Continuum with the classroom teacher placing a check next to each correct response within a five second wait time. Data were collected at multiple-baseline data points before the intervention phase began and at two week intervals during the intervention phase for each student.

Results

All participants demonstrated a positive change in the percentage of letters identified after receiving the intervention. The number of alphabet letters identified by

naming appears in Figure 6. Participants' performance trends accelerated with no

variability. Participant A's baseline data were 0% of alphabet letters identified, which

increased to 54% during the intervention phase. Participant B's letter identification

reached 27% accuracy after the intervention phase, which increased from the baseline

probe of 0%. Participant C's performance on identifying alphabet letters increased from

0% to 19% during Week 10 of the intervention phase. The embedded–explicit RTI

model of emergent literacy intervention was an effective method for teaching alphabet

letter recognition to preschool children with developmental delays in the communication

domain.
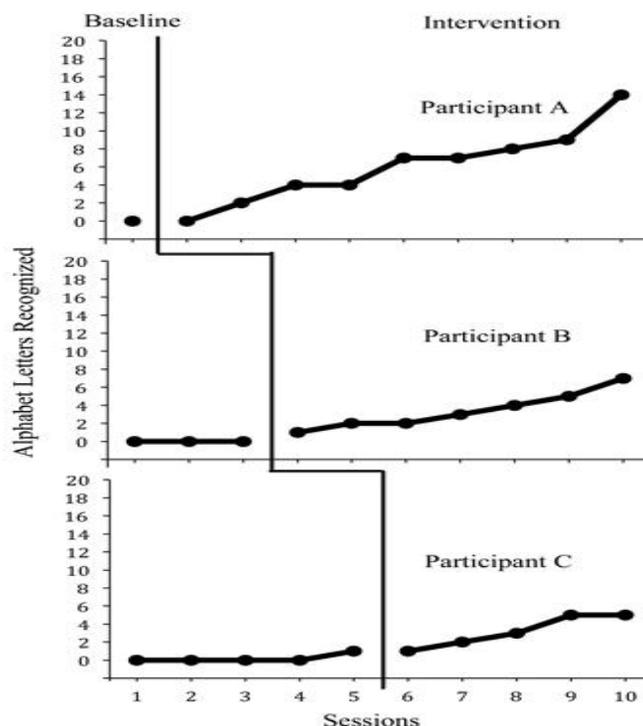
Figure 6. Single-Subject Participant Letter Identification Results

Inter-observer agreement. Inter-observer agreement was calculated by having a second observer independently record data during two assessment sessions. Inter-observer agreement was determined by dividing the number of agreements by the number of agreements plus the number of disagreements and multiplying the result by 100%. Inter-observer agreement was 98%.

Treatment integrity. Fidelity of implementation was measured using direct observation for a minimum of 33% of baseline and intervention sessions. The principal investigator and an additional observer used rate recording to document each teacher's accuracy in using the instructional approach as outlined. The degree of variation in treatment fidelity accepted over the course of the study was 10%. Treatment integrity was determined by the researcher's use of systematic observations of Tier 2 intervention sessions. The teacher's intervention implementation was coded as a plus (+). Treatment integrity was calculated by dividing the number of intervention sessions implemented by the scheduled number of intervention sessions, then multiplied by 100. Treatment integrity was calculated to be 92%.

Social validity. The need for all young children to be better prepared to enter school ready to learn is evident. Early literacy intervention for young children at risk for educational failure has been most effective when instruction was provided in a program of instruction that was thoughtful and purposeful. Teachers' perceptions of the intervention were rated using a social validity rating scale. To determine the acceptability of the intervention, the teacher completed the Post-Intervention Rating Scale at the end of the intervention phase. Teachers strongly agreed that the intervention

target was an important goal, was feasible to employ, and students achieved the targeted

goal.

CHAPTER 4: CONCLUSION

Using a three-manuscript format, the purpose of this study was to examine best practice in providing systemic early literacy interventions as a protective factor against school failure for young children at risk of reading and school failure due to (a) developmental delays, (b) low socioeconomic status, or (c) ELL status. In this study, the author examined interventions to address the literacy needs of young at-risk learners thoughtfully and purposefully. This final chapter contains sociocultural implications for early literacy learning, as well as implications for implementing a systemic approach to early literacy intervention. The chapter also includes limitations of the study and considerations for future research directions in early literacy interventions.

Implications for Early Literacy Practice

Consistent with previous literature, I demonstrated that participation in reading readiness intervention programs for at-risk preschool children does increase emergent literacy scores, although not to a statistically significant degree. As previously presented, with the exception of one SOAR participant, all participants demonstrated an increase in phonemic awareness, letter naming, or vocabulary skills.

An important contribution of this study that has extended the understanding of early literacy skills for young children is that although, early literacy intervention approaches reflect seemingly dichotomous theoretical perspectives based on either a top-down holistic model of reading development or a bottom-up reductionist learning model, in the studies comprising this dissertation, literacy interventions were integrated to provide a more balanced approach to developing literacy skills in at-risk preschool

students. An Embedded-Explicit approach to supporting literacy development was used to promote positive literacy interest and to ensure maintainable and generalized literacy skills. Teachers used balanced interventions to ensure children's participation in socially embedded, highly contextualized literacy interactions that promoted interest in literacy experiences, with the use of direct, explicit activities. Embedded-Explicit literacy instruction methods were used to focus on children's self-initiated, naturalistic, and contextualized interactions that were embedded throughout the school day.   In this approach, adults are the facilitators of children's learning, and influence children's literacy development. The importance of explicit instruction for the development of discrete skills was emphasized through the use of targeted and direct skill instruction.

In my single subject study, a multi-tiered Response to Intervention (RTI) method was used to differentiate levels of instruction to match students' needs in in gaining targeted literacy goals. The RTI method was used to provide a framework to incorporate the most effective teaching strategies in differentiating instruction.   This method is consistent with the view that an integrated approach capitalizing on evidence-based practices of seemingly dichotomous orientations can be used to maximize literacy learning for young children. Children at-risk benefited from explicit training on a wide range of language and literacy skills that were closely aligned with early literacy development and later reading achievement.

Sociocultural Implications for Early Literacy

Vygotsky (1978) emphasized social interaction and the influences of culture, peers, and adults on the developing child in his sociocultural theory of emergent literacy

acquisition. My findings are consistent with Vygotsky's theories in that sociocultural influences were reflected in the subject content of children's drawings. In my second study, Navajo kindergarteners were inspired by events occurring outside of the school setting and included topics such as landscapes, homes, people, and animals. This practice was reflective of social interaction, in which culture, peers, and adults influence the developing child. Within the context of the sociocultural perspective, literacy learning occurred through attention to the discourse, norms, and practices associated with the particular discourse and practice of communities. Sociocultural influences were used to advance instructional practice that might redress disparities in education for young at-risk children. A view of literacy instruction through the lens of sociocultural theory helps researchers and educators understand the situational specificity of literacy practice. From this perspective, I consider literacy as a tool for use in specific contexts where children are taught to negotiate multiple literacies for use in multiple contexts. Educators have a paramount role in this process as young children move through fluid identities and start navigating within and across cultural differences (e.g., between home cultures and the socially dominant school culture). Children require frequent opportunities to interact with others as they develop these skills and use a wide variety of resources for expressing their understanding, including mark making, drawing, modeling, reading, and writing. Therefore, the choices children make as they draw are influenced in part by their specific sociocultural contexts.

In my second study, The Literacy Connection, differences were noted between the drawings of Navajo kindergarten children who attended preschool and those who had not

in the complexity and depth of the drawings. The drawings of Navajo kindergarten children with previous preschool attendance were complex and included representational details. All of students' drawings with previous preschool attendance were in the Symbolic Stage, which is developmentally typical for children from ages 5 to 7. In students who had not attended preschool, 52% were at the Symbolic Stage of drawing development. Participation in the DISCOVER preschool summer program for Navajo kindergarteners at risk due to low socio-economic status was beneficial in student's acquiring critical early literacy skills by providing a targeted cultural educational enrichment opportunity to better prepare students for formal reading instruction in kindergarten and early elementary school.

Campbell and Ramey (1994) found that early education programs designed to promote academic abilities, especially for children from disadvantaged backgrounds, were linked to lasting effects on indicators related to student achievement. Children who attended preschool tended to enter school with increased literacy and language skills and tended to keep that advantage across the years over peers who did not attend preschool. Literacy achievement is consistently and positively associated with preschool attendance and resulted in a positive transition to kindergarten.

Similarities in dictated stories of Navajo kindergarten children in a dual language immersion program and those in English only programs were found in the complexity of expressions. The dictated stories of both Group A and Group B show evidence of developing or capable skills in complexity of expression. This is developmentally typical of kindergarten students. Students use word choice to convey messages with varied

complexity. Vocabulary words are limited to known or familiar words, with repetition of known words. When stories are more complex, words are grouped in ways to begin to create mental imagery of the message and convey a complete message.

Differences between dictated stories of Navajo kindergarten children in a dual language immersion program and those in English only programs were noted in voice and fluency of the stories. Differences were found in the developmental voice of the dictated stories. All of Group A kindergarteners are within the capable or developing range of demonstrating voice in a story while 54% of Group B kindergarteners are within the beginning range of demonstrating voice in a story. All of Group A kindergarten students are within the capable or developing range of story fluency, while 28% of Group B kindergarteners are within the beginning stage of story fluency.

The influence of education in a dual language, culturally relevant intervention program can be viewed in these results. Dual language immersion programs create an environment in which two languages and cultures are valued equally, the minority language and culture are assigned a status equal to that of the majority language and culture. According to Genesee (1999, n.p.), "Dual-language programs...conceptualize non-English languages as a resource for English learners and as enrichment for English speakers. Thus, by valuing other languages, dual-language programs give these languages, and their speakers, greater prestige." Students in dual language immersion programs develop full oral, reading, and writing proficiency in two languages. This allows them to see their first language in a comparative perspective, which in turn helps them analyze and refine their language use (Cazabon, Lambert, & Heise-Baigorria,

2002). Students not only achieve at levels that are similar to or higher than those of their peers enrolled in other programs on standardized tests of reading and math in English, but in addition they are able to read and write at grade level in another language. Participation in the DISCOVER preschool summer program for Navajo kindergarteners at risk due to low socio-economic status was beneficial in student's acquiring critical early literacy skills by providing a targeted cultural educational enrichment opportunity to better prepare students for formal reading instruction in kindergarten and early elementary school.

Culturally Relevant Teaching

Culturally relevant teaching (CRT) is defined as the importance of including students' cultural references in all aspects of learning (Ladson-Billings, 1995. Culturally responsive educational systems are grounded in the belief that culturally and linguistically diverse students can excel in academic endeavors. In culturally responsive classrooms and schools, effective teaching and learning occur in a culturally supported, learner-centered context, where teachers identify, nurture, and use the strengths students bring to school to promote student achievement.

Children from homes in which the language and culture do not closely correspond to those of the school may be at a disadvantage in the learning process. Such children often become alienated and feel disengaged from learning. People from different cultures learn in different ways, and their expectations for learning may be different. For example, students from some cultural groups prefer to learn in cooperation with others, whereas the learning style of others is to work independently. To maximize learning

opportunities, teachers should gain knowledge of the cultures represented in their classrooms and adapt lessons so they reflect ways of communicating and learning that are familiar to the students. Children learn about themselves and the world around them within the context of culture. Students from minority cultures may feel pressured to disavow themselves of their cultural beliefs and norms to assimilate into the majority culture, although this can interfere with their emotional and cognitive development and result in school failure (Sheets, 1999).

An increasing number of ethnically, linguistically and racially diverse young students are entering classrooms with social and learning practices that might operate under different assumptions and cultural norms than the assumptions and norms that characterized school-based literacies. Culturally responsive teaching is a pedagogy that recognizes the importance of including students' cultural references in all aspects of learning. Culturally responsive educational systems are grounded in the belief that culturally and linguistically diverse students can excel in academic endeavors. Culturally responsive pedagogy and practice facilitates and supports the achievement of all students. In culturally responsive classrooms and schools, effective teaching and learning occur in a culturally supported, learner-centered context, where the strengths students bring to school are identified, nurtured, and used to promote student achievement.

The influence of education in an environment where the home language is valued and incorporated into the curriculum can be seen in the research findings of this study. In language programs in which two languages and cultures are valued equally, the minority language and culture have a status equal to that of the majority language and culture.

discussed examples of young children bringing their own funds of knowledge to the classroom setting, but also documented how the teachers used these funds and promoted the children's learning of literacy skills and concepts. Figure 7 is a representation of the relationship among language, literacy, and culture.
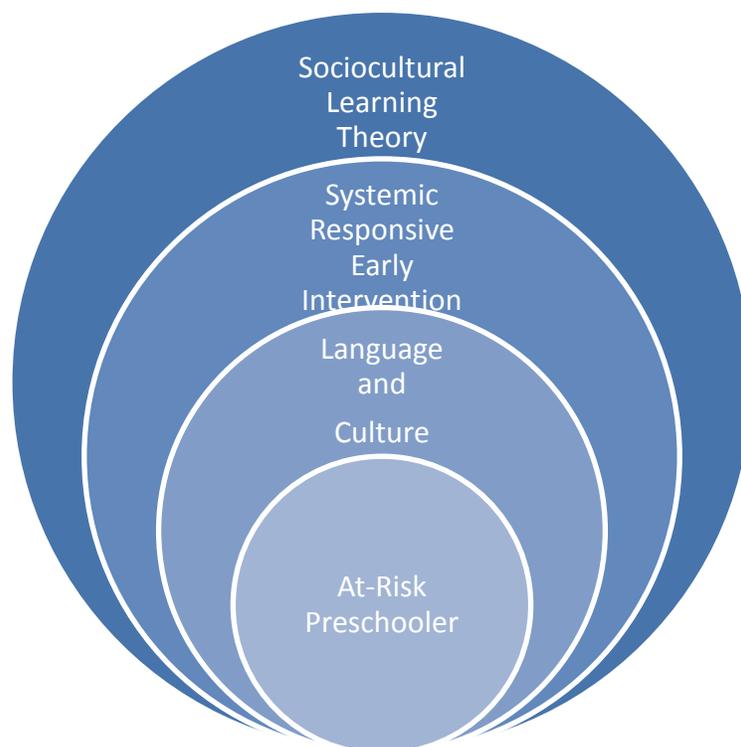
Figure 7. Relationship of language, literacy, and culture for at-risk preschoolers.

Responsive Early Literacy Intervention

The term *responsive* is defined as reacting to suggestions, influences, appeals, or efforts, or responding to treatment. For the purpose of this dissertation, systemic responsive early literacy intervention is defined as readily reactive instruction designed to meet the educational needs of children by implementing an evidence-based approach to instruction while considering the relationship between learning and culture.

In this study, I found that children who attended high-quality responsive preschool intervention programs in the home language and culture entered compulsory school with increased literacy and language skills and tended to keep that advantage across grades over peers who did not attend preschool. A link exists between attendance in high-quality early education programs, especially for children from disadvantaged backgrounds, and lasting effects on indicators related to student achievement. As a result, children are more likely to experience success in their school years. Educators in early childhood programs, particularly those serving children from at-risk populations, have a unique opportunity to prepare young children to enter formal schooling with the cognitive, language, and early literacy skills necessary for success in kindergarten and later schooling through systemic responsive instruction (see Figure 8).
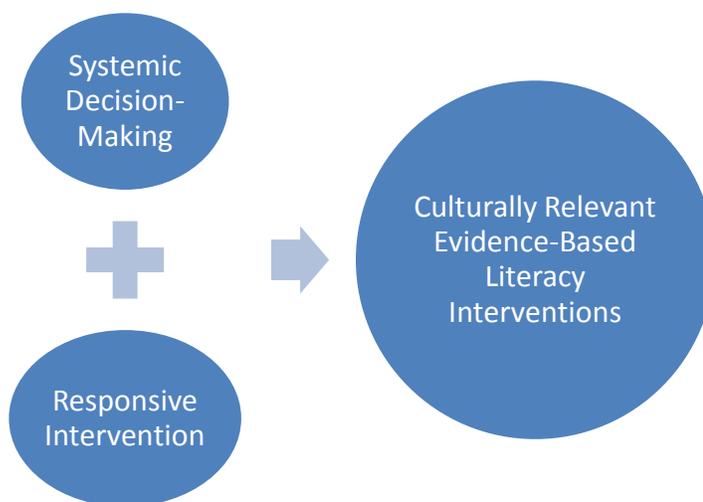
Figure 8. Process of systemic responsive culturally relevant literacy interventions.

Limitations of the Study

Participant sample limits the generalizability of the collective studies. The participants of the first and third studies resided in an urban school district in the

southwestern United States. The percentage of students identified as ELLs with a primary home language other than English was 94.4%. Most students (84%) were identified as low socioeconomic status due to qualifying for free or reduced school meals. Participants in the second study were Navajo kindergarteners in two schools in rural communities in the southwestern United States. All students were identified as low socioeconomic status. The demographic information presented in all studies may assist researchers in determining the generalizability of these findings to other populations. s.

The lack of statistical significance in participants' progress may be attributed to a) developmental delays or individual special needs or b) English Language Learner status of participating children. In the first study—The Kindergarten Connection— early literacy instruction was provided in English only, although 88% of students spoke Spanish as a first language and exhibited varying degrees of English proficiency. Participants and nonparticipants met the requirements of dismissal or limited special education services before kindergarten enrollment. Federal guidelines are provided for qualifying preschool children as special needs (Individuals With Disabilities Education Act, 2004). However, the guidelines are not as clear in providing requirements for dismissal from special education services (Daley & Carlson, 2009). An evaluation is needed to show that the child no longer has a disability, but the steps involved in determining this decision are unclear. The process of exiting students from special education services varies across states and is often inconsistent

(Rosenkoetter, Whaley, Hains, & Pierce, 2001). These inconsistencies may account for the disparity in statistically significant early literacy scores.

A limitation of the third study was the small number of participants. Although this is typical of single subject research, the small participant size can affect the degree of confidence in the generalizability of the intervention. Future research directions include an extended study with control and experimental groups to strengthen the validity and generalizability of this study.

Future Directions

Focusing future research efforts on preschoolers and children entering kindergarten contributes important information to the dialogue regarding decisions about universal programs versus targeted services, time devoted to preschool, and prevention efforts to help the most vulnerable children to transition better to formal schooling. Literacy arouses hopes, not only in society as a whole but also in the individual who is striving for fulfillment, happiness, and personal benefit by learning how to read and write. Literacy means far more than learning how to read and write, but includes how to transmit knowledge and promote social connection and participation.

Sociocultural influences were found in the traditional Navajo way of learning from observation and imitation (Kravagna, 1971). Differences were noted between the drawings of Navajo kindergarten children who attended preschool and those who had not in the complexity and depth of the drawings. The drawings of Navajo kindergarten children with previous preschool attendance were complex and included representational details. The drawings of all students with previous preschool attendance were in the

symbolic stage, which is developmentally typical for children from ages 5 to 7. In students who had not attended preschool, 52% were at the symbolic stage of drawing development. Participation in the DISCOVER preschool summer program for Navajo kindergarteners at risk due to low socioeconomic status was beneficial as students acquired critical early literacy skills by providing a targeted cultural educational enrichment opportunity to provide better preparation for formal reading instruction in kindergarten and early elementary school.

Differences between dictated stories of Navajo kindergarten children in a dual-language immersion program and those in English-only programs were noted in voice and fluency of the stories. Differences were found in the developmental voice of the dictated stories. All Group A kindergarteners were within the capable or developing range of demonstrating voice in a story, whereas 54% of Group B kindergarteners were within the beginning range of demonstrating voice in a story. All Group A kindergarten students were within the capable or developing range of story fluency, whereas 28% of Group B kindergarteners were within the beginning stage of story fluency. This practice is reflective of Vygotsky's theory of social interaction, in which culture, peers, and adults influence the developing child. Children gain ideas from one another when sitting together to draw. Several Navajo kindergarten drawings and stories in study 2 were nearly identical. Pahl (1999) found that children often copy each other and ideas tend to be shared among children working together. Peer teaching and copying is highly regarded in Navajo culture, with children learning from one another and gaining an early sense of independence from adults. Future research directions could entail exploring the

language and literacy differences found in Navajo kindergarteners with previous preschool experience to the effects of preschool attendance for young children from different cultures or home languages.

In this study, early education programs designed to promote academic abilities, especially for children from disadvantaged backgrounds, were linked to lasting effects on indicators related to student achievement. Children who received early literacy intervention services in high-quality preschool programs tended to enter school with increased literacy and language skills and tended to keep that advantage across the years compared to peers who did not attend preschool.

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Appendix A

THE KINDERGARTEN CONNECTION: EVALUATION OF A SUMMER

LITERACY PROGRAM FOR PRESCHOOL SPECIAL EDUCATION STUDENTS

ENTERING KINDERGARTEN

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Abstract

The purpose of this study was to evaluate a kindergarten reading readiness program for preschool special education students entering kindergarten classrooms for typically developing students without special education services or receiving minimal special education services. Participants were 103 children (94% minority) in an urban Southwest setting. The researcher demonstrated that participation in a reading readiness intervention program for preschool special education students does increase emergent literacy scores in vocabulary skills. Educators should address the needs of diverse young learners by implementing a systems approach to early literacy in an inclusive preschool environment by (a) providing a comprehensive language and literacy based program of instruction to children at risk of educational failure, (b) providing ongoing teacher professional development and mentoring opportunities, (c) coordinating a family, school, and community partnership.

Keywords: early childhood literacy intervention, kindergarten transition program

The Kindergarten Connection: Evaluation of a Summer Literacy Program for Preschool

Special Education Students Entering Kindergarten

Children develop literacy skills from the first year of life in conjunction with

speech and language development that continues through the preschool years and is

essential to later literacy acquisition and long term academic success (Gettinger &

Stoiber, 2008). Early literacy skills include pre-reading and pre-writing activities, such

as letter naming, letter-sound correspondence, naming pictures, scribbling, drawing

pictures, telling stories, writing one's name, and identifying letters of the alphabet. All of

these activities, with the support of parents, caregivers, and teachers, in addition to

exposure to print rich environments, help young children learn how to read and write.

Before a child begins receiving formal reading instruction in school, we may refer to the

child as an "emergent" reader.

The term emergent literacy was developed by Marie Clay, a researcher from New

Zealand, to describe her observations of young children's behaviors when using books

and writing instruments to imitate reading and writing activities (Alexander & Slinger-

Constant, 2004). This approach led to the emergent literacy perspective, which was

derived from cognitive psychology and psycholinguistics. Proponents of this approach

take a broader view of literacy to include the importance of early childhood literacy

learning in children's acquisition of formal reading and writing skills (Simmons,

Kameenui, & Chard, 1998).

Children develop literacy skills in a multitude of ways and at different ages. Most

children gain early literacy skills naturally and incidentally through their interactions with

supportive parents, caregivers, and extended family members. However, early

literacy development is influenced by the social and cultural backgrounds in

which children are raised. A number of factors put children at risk for

experiencing later difficulties in acquiring literacy skills, such as having a

developmental disability, a parent with a learning disability, English as a second

language, a low socioeconomic background, and infrequent exposure to oral and

written language (Whiteley, Smith, & Connors, 2007).

Preschool children who experience early reading difficulty are at increased risk

for entering kindergarten without an adequate foundation for developing the higher-level

literacy skills needed in school. Children entering kindergarten today are variable in

school readiness, depending on their socioeconomic status, cultural background, and

environmental factors. Unfortunately, children who enter kindergarten with limited

literacy and language skills rarely catch up with their peers (Justice & Pullen, 2003).

These deficits in early reading skills tend to remain, or even increase through elementary

school, thus widening the gap between children who have strong literacy skills and those

who do not (Gettinger & Stoiber, 2008).

Children's language and literacy development is highly influenced by literacy

practices in the home environment. The majority of poor readers experience difficulties

as a byproduct of insufficient preschool exposure to essential language and early literacy

experiences necessary for learning the associations between printed letters and speech

sounds (Whiteley, Smith, & Connors, 2007a). Researchers show that children from the

lowest socioeconomic status backgrounds have been read to for an average of 25 hours

prior to kindergarten, in contrast to 1,000 hours for children from high socioeconomic status backgrounds (Bowman, Donovan, & Burns, 2000). In addition, children of parents on welfare were found to have an average vocabulary of 525 words by three years of age, while children with professional parents had a 1,100 word vocabulary by three years of age. Children from low-income families experience significant difficulties in learning to read and write because they enter school with less exposure to language and less familiarity with letters and words. More than half of the children in the United States have at least one socioeconomic or demographic risk factor for school failure. These include a low level of maternal education, poverty, living in a single parent family, and having non-English speaking parents. Fifteen percent of children in the United States have three or more risk factors (Lazarus & Ortega, 2007). .

Early literacy skills are vital to a child's success in school and later life. One of the best predictors of whether a child will be successful in school and go on to contribute actively in our increasingly literate society is the rate of progress in reading and writing (Neuman, Copple, & Bredekamp, 2000). The literacy concepts, knowledge, and skills developed in early childhood are excellent predictors of children's future reading success (Adams, 1990; Donaldson, 1978; Snow, Burns, & Griffin, 1998; Whitehurst & Lonigan, 1998). Children who grow up in literature rich environments enter school with an understanding of the concepts underlying reading before entering school (Adams, 1990; Dickinson & Tabors, 2001). In contrast, researchers have provided evidence that children who have difficulty developing emergent literacy skills in early childhood typically remain poor readers throughout their educational process (Adams, 1990; Francis,

Shaywitz, Stuebing, Shaywitz, & Fletcher, 1996; Juel, 1988; Stanovich, 1986; Torgesen & Burgess, 1998).

An important tenet of the early literacy perspective is that children acquire crucial foundation skills and an understanding of literacy well before the onset of formal instruction (Teale & Sulzby, 1986). The preschool years are critical to the development of emergent literacy skills that will ensure a smooth transition into formal reading (Pullen & Justice, 2003). Providing appropriate supports and experiences during the early childhood years can prevent the development of later reading difficulties. Whitehurst and Lonigan (1998) found three emergent literacy factors associated with later reading achievement: phonological awareness, print awareness, and oral language. In fact, these areas of emergent literacy represent a significant source of the individual differences in later reading achievement (Lonigan, Burgess, & Anthony, 2000; Stuart, 1995).

Early childhood includes children from birth to eight years. Children take their first critical steps toward learning to read and write very early in life. Experiences in the early years can affect the assumptions and expectations about becoming literate and give children the motivation to work toward learning to read and write (Neuman, Copple, & Bredekamp, 2000). The quality of children's experiences within preschool programs may play an important role in their development of academic, language, literacy and social or emotional competencies that help prepare them to enter school ready to learn (Bronfenbrenner, 1986). Children who experience social and economic risks, including developmental delays, may benefit more from attending high-quality preschool programs than their more advantaged peers; thus, programs to deliver high-quality experiences may

serve as a protective factor for these children to help reduce the achievement gap that

exists at school entry (Burchinal et al., 2000).

Based on Vygotsky's theory, a quality program is one that amplifies the child's

learning within age and developmentally appropriate activities by focusing on the

accomplishments of preschool, which includes the ability to engage in intentional

learning activities. Brodrova and Leong (2005) found the following components to

emphasize the developmentally appropriate content of education and the specific nature

of interactions between the teacher and child: the ability to self-regulate behaviors, the

ability to use symbols, and the ability to interact positively with peers and adults.

Specific knowledge and skills should be viewed as a means to the development of these

essential competencies and not as the end result of preschool education. Content should

be taught in such a way that it scaffolds the development of underlying competencies.

Early identification and intervention for preschoolers at risk for reading failure are

topics of growing interest nationwide. Increase in the use of performance and

accountability measures through the No Child Left Behind Act of 2001 has resulted in

greater academic pressure for schools and for individual students at young ages (Silliman,

Wilkinson, & Brea-Spahn, 2004). With these increased expectations comes the

widespread recognition that children arrive at the critical kindergarten juncture with

variable states of readiness and that the quality of early learning experiences and

environments contributes substantially to that variability (Shonkoff & Phillips, 2000;

Snow, Burns, & Griffin, 1998). Up to 40% of children enter kindergarten at least one

year behind age level peers in critical language and reading readiness skills. The cost for

children to be on grade level with their peers exceeds the costs of prevention and early intervention during the preschool years (Fielding, Kerr, & Rosier, 2007).

Early literacy is the process of learning to understand and use language for functional communication. Functional communication is the forerunner to later success in reading and writing. Children first learn to use oral forms of language, which are comprised of listening and speaking, and then begin to explore and implement the written forms of language, which are reading and writing. The process of early literacy development is a greater challenge for the young learner identified as having a developmental delay and qualifying for special education services.

Early Childhood Special Education

Early childhood special education is free, appropriate, specially designed instruction to meet the unique needs of a preschool child with a disability from three years of age until the age of eligibility for kindergarten (Arizona Revised Statutes §15-761, 22). Instruction is provided in the least restrictive environment for the child, which often is the public preschool classroom.

Children qualify for preschool special education services under the category of Speech Language Impairment (SLI), Developmental Delay (DD), or Preschool Severe Delay (PSD). SLI is demonstrated as performance by a preschool child on a norm-referenced language test that is at least one and one half standard deviations below the mean for children of the same chronological age or whose speech, out of context, is unintelligible to a listener who is unfamiliar with the child. DD is performance by a preschool child on a norm-referenced test that is at least one and one-half, but not more

than three, standard deviations below the mean for children of the same chronological age in two or more of the following developmental areas: cognitive, physical, communication, social or emotional, or adaptive. PSD is defined as performance by a preschool child on a norm-referenced test that is more than three standard deviations below the mean for children of the same chronological age in one or more of the developmental domains. The results of the tests must be supported by information from a comprehensive developmental assessment that includes parental input. As preschool children transition to kindergarten, the preschool category in which they were served is reviewed. Eligibility criteria for students, ages 8-21, are used to determine which disability classification for special education in Arizona Revised Statue §15-761 is appropriate.

<div align="center">**Sociocultural Framework**</div>

Vygotsky (1978), in his sociocultural perspective of emergent literacy acquisition, emphasizes social interaction and the influences of culture, peers, and adults on the developing child. Children increasingly understand the purposes of oral and written language as they observe how adults use literacy to construct and communicate meaning, and as they engage in literacy activities themselves. Children's creations of micro-communities, or literacy partnerships, during unstructured play and shared literacy activities, such as reading together, provide opportunities to rehearse the construction and communication of meaning and to engage in representational competence.

To understand the influence of social interactions and culture, Vygotsky proposed the zone of proximal development. This zone is the difference in a child's performance

when she attempts a problem on her own and her performance when an adult or a more competent peer provides assistance. A child experiencing difficulty writing letters may be able to demonstrate progress with the help of an adult who writes sample letters or helps the child trace letters. The instructional technique in which the teacher models the desired learning strategy or task and then gradually shifts responsibility to the students is called scaffolding. From this perspective, language and cognition emerge in development at about the same time and are intertwined. Children build new concepts by interacting with others who either provide feedback about their hypotheses or help them accomplish a task (McGee & Richgels, 1996).

Early Intervention Research

Empirical research in the area of early literacy intervention for the preschool special education population preparing to go to kindergarten is more prolific as programs and strategies to improve young children's reading readiness are of increasing public interest and policy concern in the preschool arena. Bailet, Repper, Piasta, and Murphy (2009) reported results from an assessment and intervention study targeting preschool children at risk for reading failure. Researchers examined an approach for reducing the reading achievement gap evident in pre-kindergarteners exhibiting delays in the acquisition of critical early literacy skills and provided an experimental, targeted educational intervention to better prepare for formal reading instruction in kindergarten and early elementary school.

The intervention consisted of eighteen 30-minute lessons delivered twice weekly for nine weeks and focused on teaching critical emergent literacy skills within small

groups. The emergent literacy skill gains of children receiving treatment in the fall (the immediate intervention group) were compared to those assigned to receive treatment in the spring (the delayed intervention group, serving as an untreated control in the fall) to test the impact of the intervention. Instruction was delivered in learning centers, and designed to measure intervention treatment and effects for students' gains in rhyming, alliteration, picture naming, and print and letter knowledge skills. Preschoolers made gains in critical emergent literacy skills in response to the nine week experimental intervention, delivered to small groups in various typical preschool and child care settings. Specifically, the immediate intervention group made substantial gains in rhyme and alliteration recognition, as compared to the delayed intervention, matched control sample. Researchers found a significant effect for the experimental intervention, as children who received more lessons, on average, gained more in their phonological awareness, vocabulary, print, and letter knowledge skills. In addition, students in the delayed intervention group made similar gains as a result of the intervention, in comparison with gains made during the months in which they did not receive this intervention. Researchers demonstrated a positive impact of this intervention for pre-kindergartners at risk for reading failure.

Implementing a model focusing on similar emergent literacy skills, Edmonds et al (2008) researched a pre-kindergarten summer intervention program for children who attended various community preschools and identified as at risk for later literacy problems in school due to low socio-economic status. Ninety three pre-kindergartners participated in the six week summer intervention program. Researchers documented

improvements in children's letter-naming, picture naming, and rhyming skills when compared with a nonparticipating comparison group. The intervention was based on the foundation of early learning initiatives to develop successful school experiences for young children from low-income, high risk-for-failure environments. Intervention methods included language and literacy activities grounded in Scientifically Based Reading Research (SBBR) that supported age-appropriate development of oral language, phonological awareness, print awareness, and alphabetic knowledge. Improvements were noted on all measures with greater gains evident for the children in the summer program. Overall, these trends reflect favorable outcomes for participating students and a positive transition to kindergarten.

Justice, Chow, Capellini, Flanigan, and Colton (2003) used an alternating treatment research design to determine the relative efficacy of an experimental explicit emergent literacy intervention program for preschoolers experiencing multiple risk factors. Participants completed two 6-week waves of intervention in small groups; one wave featured the experimental explicit intervention program, the other featured a comparison program. Emergent literacy assessment was conducted at pretest and at the end of each wave. Significant widespread gains were found in emergent literacy knowledge over the entire 12-week intervention program ($p=.002$); growth was significantly greater during the experimental explicit intervention program than in the comparison program.

Purpose

I hypothesized that a positive relationship existed between participation in a reading readiness program to provide direct instruction in early literacy skills and reading success in kindergarten for previous preschool special education students. The purpose of this study was to examine the efficacy of a kindergarten reading readiness program for preschool special education students who made the transition to kindergarten classrooms for typically developing students without special education services or receiving minimal special education services. The following question guided the research: Does participation in a reading readiness intervention program for preschool special education students who are attending a regular education kindergarten classroom increase early literacy scores in a) phonemic awareness, b) alphabetic principles, and c) vocabulary knowledge.

Method

Participants

Participants resided in an urban school district in the Southwestern United States. The percentage of students identified as minority was 94.4%. Specifically, the ethnic make-up of the student body was 87.7% Hispanic (14,804), 5.6% White (952), 4.1% Native American (687), 2.1% (353) African American, and 0.5% (91) Asian American. During the 2006-2007 school year 14,434 students (83.62%) qualified for free or reduced-price meals. Of the district's 8,642 elementary students, 32% were classified as English language learners. During the 2007-08 school year, the district's graduation rate was 69% and the dropout rate for students in high school was 9.1%. Approximately 14% of the district's student population received Special Education services.

Random selection of participants was not possible because this was an ex post facto study; therefore, a quasi-experimental design was implemented. One hundred twenty eight children met the requirements for the intervention program as they made the transition from preschool to kindergarten without special education services, speech resource services only, or with a 504 plan. All participants and non-participants were recommended by their classroom teachers for the intervention program. One hundred three students, age 5 before or by September 1st (32 girls, 71 boys) attended the program. Twenty five students were unable to participate due to parents' work schedule, the parent training requirement, or a parent's inability to provide transportation. Students eligible to attend the summer program, but not attending comprised the comparison group. Students' ethnicities the participant and control groups were representative of the district population.

Project SOAR Intervention

Project Student Opportunity for Academic Readiness (SOAR) was a privately funded grant, developmentally appropriate summer (four weeks, four days per week, four hours per day), literacy program for preschool students with special needs who were in transition from preschool to kindergarten. The curriculum was developed from the state's Early Learning Standards for kindergarten with a focus on reading, including phonemic awareness, vocabulary knowledge, letter and sound recognition, and text comprehension using a project approach and interactive community-based instruction. Instruction was provided in English with Spanish language support. The program was staffed by preschool teachers, one kindergarten teacher, and four instructional assistants.

Parent education sessions were conducted during each of the four weeks with emphases on kindergarten learning expectations. Parents also participated in discussions and activities in the four targeted areas. Activity packets and ideas were sent home for parents to use with their children for the remainder of the pre-kindergarten summer program.

Assessment

Kindergarten assessment. Participating students were administered pre-intervention and post-intervention formative kindergarten assessments in phonemic awareness, initial sound identification, letter recognition, classification, and story elements. Phonemic awareness was assessed by requiring students to produce rhyming words orally in response to spoken words, to blend spoken phonemes to form a single syllable word, and to segment one syllable words into phonemes. When initial sound identification was assessed, students were required to identify the initial and final sounds (not the letter) of a spoken word. Students were required to identify capital letters of the alphabet to assess letter recognition. Classification skills were assessed by requiring students to sort familiar words into basic categories (colors, shapes, foods, and animals). Story elements were assessed by requiring students to identify characters, settings, and key events, and to sequence story events. The Kindergarten Readiness assessment is presented in Appendices A, B, and C.

DIBELS. All students' early literacy skills were assessed using Dynamic Indicators of Basic Early Literacy Skills (DIBELS). DIBELS is a set of procedures and measures for assessing the acquisition of early literacy skills from kindergarten through

sixth grade. DIBELS was designed for use in identifying children experiencing difficulty in acquisition of basic early literacy skills to provide support early and prevent the occurrence of later reading difficulties.

DIBELS is used to assess initial sound fluency, phoneme segmentation fluency, nonsense word fluency, word use fluency, oral reading fluency, and retell fluency. Initial Sound Fluency (ISF), a measure of phonological awareness, is an assessment of a child's ability to recognize and produce the initial sound in a word presented orally. The Nonsense Word Fluency (NWF) measure is a test of the alphabetic principle, including letter-sound correspondence, in which letters represent their most common sounds, and of the ability to blend letters into words. Word Use Fluency (WUF) is given as an oral assessment. Students are given a word and asked to use it in an utterance to demonstrate word meaning.

Elliot, Lee, and Tollefson (2001) established correlations between DIBELS scores. Criterion measures of phonological awareness, standardized achievement measures, and teacher ratings of achievement provided concurrent validity coefficients ranging from .60 to .70. Hintze, Ryan, and Stoner (2003) conducted a series of diagnostic accuracy studies, using DIBELS as predictor variables and the Comprehensive Test Of Phonological Processing (CTOPP) as the criterion measure, to examine the concurrent validity and diagnostic accuracy of DIBELS compared to the CTOPP. Researchers found that DIBELS strongly correlates with subtest and composite scores of the CTOPP that are designed to measure phonological awareness and memory tasks. ISF correlated most strongly with the Elision, Blending Words, Sound Matching, and Non-

Word Repetition subtests of the CTOPP. Moreover, ISF was quite strongly associated with the Phonological Awareness Composite of the CTOPP and demonstrated a moderate relationship with the Phonological Memory Composite as well.

Data Collection and Analysis

Students' DIBELS benchmark assessment data were obtained from the school district's database for SOAR participants and non-participants. The students were administered DIBELS assessments three times during the school year (August, December and April) from kindergarten through third grade by trained school faculty. Data were reviewed from the beginning, middle, and end of the kindergarten year to determine early literacy skills acquisition and necessity of additional intervention services. Students' DIBELS scores were analyzed using SPSS quantitative software to conduct an independent samples t-test comparison of mean differences between participants and the comparison group (eligible, invited non-participants).

<div align="center">

Results

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Pre-Post Intervention

Year one participating students were administered pre-intervention and post-intervention formative kindergarten assessment in phonemic awareness, initial sound identification, and letter recognition, classification, and story elements. Pre-post intervention assessment data were complete for 18 students. Thirty nine percent of SOAR participants (n=7) demonstrated an increase in phonic awareness, able to distinguish rhyming word pairs, identify initial sounds of a spoken word, or segment one syllable words into phonemes. One hundred percent of SOAR participants (n=18)

demonstrated an increase in alphabetic principles, able to name at least one additional letter of the alphabet. Seventy two percent of SOAR participants (n=13) demonstrated an increase in vocabulary skills, able to sort familiar picture words into categories. These data are represented in Table 1.

DIBELS

SOAR participant and non-participant DIBELS normative data were collected and analyzed using an independent samples t test to examine the mean differences between groups. DIBELS data for all three early literacy domains were available for 86 students attending district elementary schools. In Phonemic Awareness, SOAR participants exhibited on average, lower scores (*M*=31.07, *SD*=16.93) than non-participants. The difference in scores for participants and non-participants was not statistically significant at the .05 level (*t [84] = -.251)*. The magnitude of the differences in the means (mean differences =-1.18, 95% CI -10.52, 8.16) was a small effect (Cohen's *d* =-.07). In Alphabetic Principles, SOAR participants exhibited on average lower scores than non-participants. Statistically significant differences were not found (*t [84] =.507*). The magnitude of the differences in the means (95% CI: -10.62., 5.28] was a small effect (Cohen's *d* =-.26). In Vocabulary/Word Use Fluency, SOAR participants exhibited higher scores on average than non-participants. The difference was statistically significant (*t* [84] =.049). The magnitude of the differences in the means (mean differenc*es = 9.58, 95%CI: .03, 19.13)* was a medium effect (Cohen's *d* =55). Statistical comparisons are in Table 1.

Discussion

Consistent with previous literature, I demonstrated that participation in a reading readiness intervention program for preschool special education students moving to a regular education classroom with no or minimal special education services does increase emergent literacy scores, although not to a statistically significant degree. As previously presented, with the exception of one SOAR participant, all participants demonstrated an increase in phonemic awareness, letter naming, or vocabulary skills.

The lack of statistical significance in participants' progress may be attributed to a) developmental delays or individual special needs or b) English Language Learner status of participating children. Participants and nonparticipants met the requirements of dismissal or limited special education services before kindergarten enrollment. Federal guidelines are provided for qualifying preschool children as special needs (Individuals With Disabilities Education Act, 2004). However, the guidelines are not as clear in providing requirements for dismissal from special education services (Daley & Carlson, 2009). An evaluation is needed to show that the child is no longer a child with a disability, but the steps involved in determining this decision are unclear. The process of exiting students from special education services varies across states and is often inconsistent (Rosenkoetter, Whaley, Hains, & Pierce, 2001). These inconsistencies may account for disparity in early literacy scores.

Early Literacy instruction was provided in English only, although 88% of students spoke Spanish as a first language and exhibited varying degrees of English proficiency. Already the nation's largest minority group (14% of the United States population; U.S. Census Bureau, 2004), recent projections are that by 2030, Latinos will

represent approximately one-fourth of America's early childhood population, with many

facing the challenges of growing up in poverty and learning English in primarily Spanish

speaking households (National Task Force on Early Childhood Education for Hispanics,

2007). Tabors and Snow (2002) documented an achievement gap between White

children and children from Spanish speaking households. Many Latino children enter

kindergarten scoring significantly below their same-age White, English-speaking peers

on many measures of language and literacy (Garcia & Miller, 2008; National Task Force

on Early Childhood Education for Hispanics, 2007; Vernon-Feagans, Hammer, Miccio,

& Manlove, 2002).

A strategy for improving Spanish-speaking students' educational outcomes is

providing content instruction in Spanish (Collier & Thomas, 2004; Oller & Eilers, 2002;

Rolstad, Mahoney, & Glass, 2005). Instruction was provided in Spanish for Spanish

speaking students. Teachers' support of academic instruction in a child's native

language will, over time, support improved academic and literacy outcomes in English

(Cummins, 1979; Krashen, 1999). For young Spanish-speaking children, researchers

provide evidence of cross-linguistic transfer of early literacy skills, with higher

achievement in Spanish early literacy development in kindergarten and first-grade

predicting improved reading achievement in English in the third and fourth grades

(Lindsey, Manis, & Bailey, 2003; Manis, Lindsey, & Bailey, 2004).

The preschool years are critical to the development of emergent literacy skills

that will help prevent later reading problems (Pullen & Justice, 2003). Early literacy

skills, such as phonological awareness, letter knowledge, phonemic awareness,

vocabulary, and text comprehension, are the best predictors of later achievement in reading and oral language (Adams, 1990; Snow et al, 1998.). Parents, teachers, and educational leaders play an important role in helping to develop practices and policies and connections to support early literacy development during the transition to kindergarten. Social connections include interactions between children and teachers, parents and teachers, as well as preschool teachers and kindergarten teachers. Connections are important for supporting competencies in young children that can ensure their school success. When social connections are established and maintained, children may have more positive school experiences because these resources are available (Kraft-Sayre and Pianta, 2003). For example, if parents have positive relationships with their children's teachers, then teachers and parents can work more effectively together to support children's educational progress. Home and school connections were developed in the SOAR program through opportunities for parent to participate in learning activities, community based instruction, and parent workshops offered weekly during the program.

Implications for Practice

My research on improving children's early literacy achievements has implications for educational policy. State and local policymakers can allocate resources to ensure that new knowledge about curricula and professional development is used to improve instructional practice. The need for all young children to be better prepared to enter school ready to learn is evident. I found that the literacy learning strategies thought to be most effective were consistent with conclusions described in the Report of the National

Reading Panel (National Institute of Child Health and Human Development, 2000). Early

literacy intervention for young children at risk for educational failure is most effective

when instruction is provided by knowledgeable teachers in collaboration with the family

and community. This requires a program of instruction that is thoughtful and purposeful.

Researchers should address the needs of diverse young learners by implementing a

systems approach to early literacy in an inclusive preschool environment by (a) providing

a comprehensive language and literacy based program of instruction to children ranging

in age from 2.9 to 5.5 years of age who are at risk of educational failure, (b) providing

ongoing teacher professional development and mentoring opportunities, (c) coordinating

a family, school, and community partnership.

Language and Literacy. Federal and state legislators have emphasized

evidence-based practice to guide curriculum and instruction. Evidence must be grounded

in scientifically based research, which is the application of systematic and objective

procedures to obtain information about questions within a field and to ensure that the

research will have a high degree of confidence that it is reliable and valid. Aspects of the

summer program designed to support the development of early literacy skills included (a)

increased instructional time, (b) continuity of teaching (reducing the amount of time

children spend away from educational activities at home during the summer months with

reduced language and early literacy skill support), (c) a curriculum with a logical

progression of skills, and (d) attention to phonological awareness and oral language.

Professional Development. The need for highly capable teachers is a constant theme

in early childhood education literature (Strickland & Riley-Ayers, 2007). National and

government mandates have increased the expectations and educational requirements of early childhood teachers for federally and state funded preschool programs (U.S. Department of Health and Human Services, 2003). SOAR early childhood teachers were able to promote a range of language and literacy practices and strategies to foster development and assessment of vocabulary, oral language, phonological awareness, and print awareness.

Family, School, and Community Partnerships. Successful systemic initiatives usually result in an increase in the quantity and quality of the various forms of parent involvement identified by Epstein (1995), as parent volunteers in the school and parents helping their children with homework. Educators implementing these initiatives have succeeded in improving student academic achievement and transforming the culture of schools (Lewis, 1997; Murnane & Levy, 1996). The main goal of parent involvement initiatives is to raise students' academic achievement Effects of home environments on school learning are significant and well documented in the research literature. Parents make significant contributions to their children's school outcomes (Fan & Chen, 2001). Parent participation in their child's education is associated with increased achievement motivation, reduced dropout rate, and improved social behavior and interactions with peers. SOAR parents education sessions provided families with community based resources, materials, and learning expectations for their child's kindergarten school year.

Limitations

The data were incomplete as children attended up to 12 different elementary schools across the district. Administrative staff within the school required kindergarten

through third grade district wide DIBELS assessment after the SOAR program was implemented, as a result, DIBELS assessment was not consistent across schools within the district and data were not available for 23 students. Ten children no longer resided in the district and their data were unavailable.

Children participating in the program were better prepared for kindergarten than non-participating peers. As a result, participating children are more likely to experience success in their early school years (Campbell et al., 2001; Campbell & Ramey, 1995). Educators in early childhood programs, particularly those serving children at risk, have a unique opportunity to prepare young children to enter formal schooling with the cognitive, language, and early literacy skills necessary for success in kindergarten and later schooling.

I have expanded on previous literature by examining improvements to early literacy skills as a result of a four week summer intervention program to develop early literacy skills of preschool children at risk for academic and social difficulties due to developmental delays. Focusing research efforts on children entering kindergarten contributes important information to dialogue that addresses decisions about universal programs versus targeted services, time devoted to preschool, and prevention efforts to help the most vulnerable children to transition better to formal schooling. Literacy arouses hopes, not only in society as a whole but also in the individual who is striving for fulfillment, happiness and personal benefit by learning how to read and write. Literacy means far more than learning how to read and write, but how to transmit knowledge and promote social connection and participation (UNESCO Institute for Education, 2010).

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Table 1

Kindergarten Readiness Assessment

Phonemic Awareness			Letter Recognition			Vocabulary		
Pre	Post	Growth	Pre	Post	Growth	Pre	Post	Growth
1	3	2	2	10	8	4	4	0
1	2	1	20	22	2	2	4	2
1	1	0	5	7	2	1	3	2
3	3	0	5	13	8	4	4	0
0	1	1	14	16	2	4	4	0
1	3	2	1	12	11	0	1	1
1	2	1	0	2	2	0	3	3
0	0	0	0	1	1	4	4	0
2	2	0	0	19	19	3	4	1
0	0	0	8	11	3	2	4	2
0	2	2	2	6	4	0	2	2
4	4	0	16	18	2	4	4	0
0	0	0	1	5	4	1	3	2
0	0	0	10	21	11	3	4	1
0	0	0	8	11	3	2	4	2
1	1	0	4	10	6	2	4	2
0	0	0	4	6	2	3	1	2
0	2	2	2	6	4	0	2	2

Note. This table shows the pre-test and post-test scores for participating students in the Early Literacy Summer Intervention Program, for which data was available at both measures.

Table 2

Independent T Test Analysis Summary

Variable	Participants		Non-Participants				
	M	SD	M	SD	*t(84)*	*p*	Cohen' *d*
Phonemic Awareness	31.07	16.93	32.50	17.04	-.251	.80	-.07
Alphabetic Principles	24.7714	13.77	27.44	17.13	.507	.15	-.26
Vocabulary	28.83	17.43	19.25	16.84	2.0	.049	.55

Note: Values are reported as M-Mean score, SD-Standard Deviation from the mean, t-test-test for equality of means, p value-measure of statistical significance (.*p<.05.). Cohen's d is a measure of the absolute magnitude of treatment effect size.

Appendix A: *Kindergarten Readiness Assessment: Phonemic Awareness*

Phonemic Awareness Assessment Kindergarten	Page 1 of 3

Name _____ Date _____ Score _____

Total PhonemicAwareness
Students must meet standards on all five phonemic awareness subtests to receive M on report card.

R-S1C2PO2-Orally produce rhyming words in response to spoken words (e.g., What rhymes with hat?).

Rhyming
I'm going to say a word and you give me one word that rhymes with that word. It can be a real word or a pretend word. If I say pin you could say win or fin. * Now it's your turn. Tell me a word that rhymes with---- (Write student responses)

1. pat _____
2. dig _____
3. hug _____
4. can _____

Score _____
Meets = 3/4

Teachers may use more examples if needed to ensure the student understands the task.

R-S1C2PO6- Blend spoken phonemes to form a single syllable word (e.g., /m/.../a/.../n/...makes man).

Blending Phonemes   Date _____

I am going to say three sounds. Listen to the sounds and put them together to make a word. Listen to these sounds. What word do they make? /d/ /o/ /g/. Dog. Listen to these sounds. /c/ /a/ /t/. Cat. Now it's your turn. What words do these sounds make? (Write student responses)

1. /d/ /i / g/ _____
2. /b/ /u/ /s/ _____
3. /l/ /i/ /p/_____
4. /f/ /a/ /t/_____

Score _____
Meets = 3/4

R-S1C2PO8- Segment one-syllable words into it phonemes, using manipulatives to mark each phoneme (e.g., dog makes /d/.../o/.../g/ while the student moves a tile for each phoneme.

Segmenting Words   Date _____
I am going to say a word. After I say it, you tell me all the sounds in the word. So, if I say, "Sam," you would say, /S/ /a/ /m/. Let's try one. Tell me the sounds in "mop". /m/.../o/.../p/. Let's try one more. Tell me the sounds in "rug", /r/../u/../g/. Now you try these words. (Write student responses)

1. fat /____/ /____/ /____/
2. hop /____/ /____/ /____/
3. sit /____/ /____/ /____/
4. bug /____/ /____/ /____/

Score_____
Meets = 9/12-One point for each correct sound

* Teachers: Students may use manipulatives (ie.,chips fingers) to mark each phoneme.

Appendix B: *Kindergarten Readiness Assessment: Initial Sounds*

Phonemic Awareness Assessment
Initial Sounds
Kindergarten

Name _____ Date _____
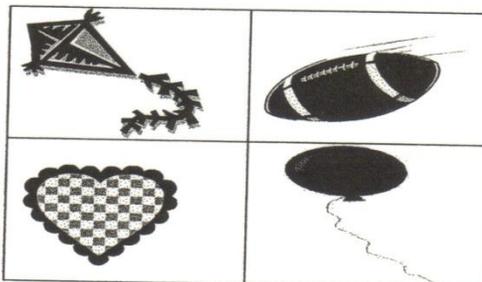
R-S1C2PO7- Identify the initial and final sounds (not the letter) of a spoken word.

Practice Test

Look at these pictures. This is a *balloon, kite, football* , and a *heart*. *(Point to each picture while saying its name.)*

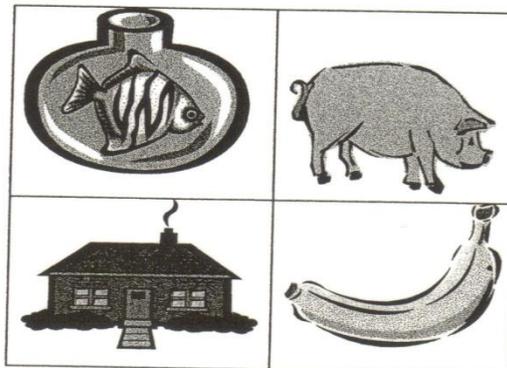1. Balloon begins with the sound /b/. (Point to the balloon.) Listen, /b/
2. Which word begins with /f/?_____
3. Which word begins with/h/?_____
4. What sound does *kite* begin with?_____

Actual Test

This is a *banana, house, pig* and a *fish*.
1. Which word begins with /h/ ?_____
2. Which word begins with /p/ ?_____
3. Which word begins with /b/ ?_____
4. What sound does *fish* begin with?_____

Score_____
Meets = 3/4

Appendix C: *Kindergarten Readiness Assessment: Story Elements*

Story Elements Assessment
(Characters, Sequence, Setting)
Rosie's Walk
Kindergarten

R-S2C1PO2- Identify elements of a story including characters, setting and key events.
R-S2C1PO3- Retell or re-enact a story, placing the events in the correct sequence.

Name_____Date_____Score_____
(Meets = 6/6)

Who was in the story? Cut out the characters and put them in the circles.
(1 point per character)
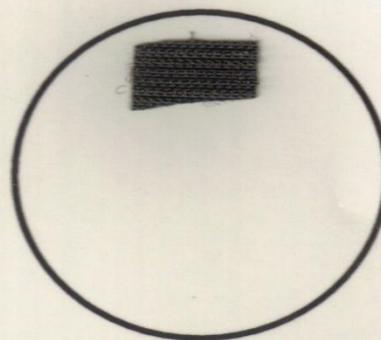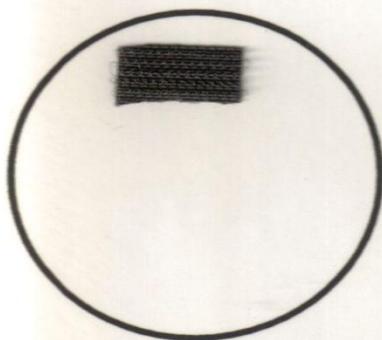
What happened in the story? Put the pictures in order.
(1 point per picture in correct sequence)

1

2

3
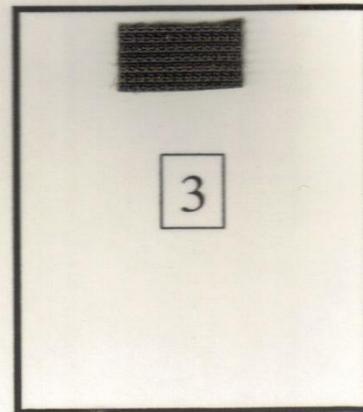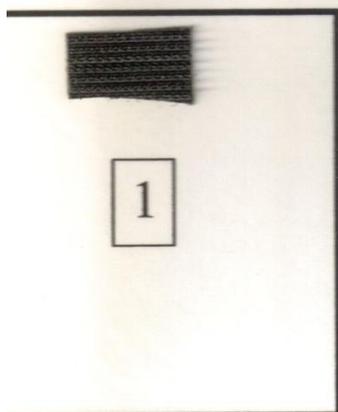
Appendix B

LITERACY CONNECTIONS: LINKING PRESCHOOL TO LANGUAGE AND

CULTURAL COMPETENCIES IN NAVAJO KINDERGARTENERS' DRAWINGS

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Abstract

This study was conducted to examine the influence of prior preschool attendance, culture, and language socialization on early literacy success in drawings and dictated stories for Navajo kindergarten students at risk of school failure due to low socioeconomic status. The cultural values, attitudes, and beliefs of the home and heritage language were reflected in the complexity and depth of the drawings and writing of young preschoolers. Early education programs designed to promote the heritage culture in conjunction with academic abilities, especially for children from disadvantaged backgrounds, were linked to lasting effects on indicators related to student achievement. Literacy achievement has been consistently and positively associated to preschool attendance, and a positive transition to kindergarten.

Keywords: early literacy, preschool attendance, culture and language

Literacy Connections: Linking Preschool to Language and Cultural Competencies in

Navajo Kindergarteners' Drawings

An increase in the use of performance and accountability measures through the No Child

Left Behind Act of 2001 has resulted in greater academic pressure for schools and for

individual students at young ages (Silliman, Wilkinson, & Brea-Spahn, 2004). With

these increased expectations came the widespread recognition that children arrived at the

critical kindergarten juncture with variable states of readiness and that the quality of early

learning experiences and environments contributed substantially to that variability

(Shonkoff & Phillips, 2000; Snow, Burns, & Griffin, 1998). Early language and literacy

skills have been critical to success in school and essential for developing proficient

reading and writing skills as well as overall success in school (Teale & Sulzby, 1986;

Whitehurst & Lonigan, 1998).

Early literacy has been defined as the process of learning to understand and use language

for functional communication. Functional communication has been defined as the ability

to communicate and share ideas with others, and considered to be a forerunner to later

success in reading and writing. Children have first learned to use oral forms of language,

which were comprised of listening and speaking, and then to explore and implement the

written forms of language, reading and writing. The process of early literacy

development has been considered to be a greater challenge for the young English

Language Learner (ELL).

As more attention was focused on children's readiness to begin kindergarten

(Justice, Bowles, Pence Turnbull, & Skibbe, 2009; Rimm-Kaufman, Pianta, & Cox,

2000), readiness skills became increasingly important to understand the unique effect of preschool on children's school readiness. For preschoolers at risk of educational failure due to risk factors such as low socioeconomic status or learning the English Language, increasing early literacy skills could be vital to closing the achievement gap between them and their more advantaged peers (Klein & Knitzer, 2007). Temple, Reynolds, and Miedel (1998) found poor reading skills during preschool and early elementary school were predictors of later lower academic success and increased high school drop-out rates. Preschool advocates argued that providing early exposure to text and print concepts supported literacy development and resulted in long-term academic success (Barnett, Young, & Schweinhart, 1998; Bryant, Peisner-Feinberg, & Clifford, 1993; Burchinal, Peisner-Feinberg, Pianta, & Howes, 2002; Campbell, Pungello, Miller-Johnson, Burchinal, & Ramey, 2001).

The influences of childhood poverty on development have been multiple, diverse, direct, and indirect (Huston, McLoyd, & Garcia Coll, 1994; Lemer, Castellino, Terry, Villarruel, & McKinney, 1995). Campbell and Ramey (1995) found that children's early learning environments were affected by socioeconomic status. For example, compared with kindergarteners from families in the bottom fifth of the socioeconomic distribution, children from the most advantaged fifth were four times as likely to have a computer at home, three times as many books, the opportunity to be read to more often, and less television time than children in families of lower socioeconomic status. Poor children were more likely than their affluent peers to experience poor physical or mental health, to be raised by parents who had completed fewer years of education, and to grow up in

households that were less cognitively stimulating, which might negatively affect

children's cognitive and academic attainment (Anderson-Moore, 2009).

The association has been strong between poverty and poor cognitive, social, and

academic outcomes for children. Children born in poverty, especially children who have

been exposed to multiple risks (e.g., single parenting, minority status, health problems,

chronic poverty, very-low-income neighborhood, and high levels of incidental stressors),

were more likely to have measured IQs lower than middle-class peers (Campbell &

Ramey, 1994), to be slower in developing language and literacy skills (Hart & Risley,

1995), and to show poorer performance on academic tests and in school contexts

(Korenman, Miller, & Sjaastad, 1995).

The influence of early childhood education on the healthy development and future

well-being of children who are economically and socially disadvantaged has been a vital

policy concern with important implications for families, communities, business, and

government. Young children living in poverty have faced substantial education deficits

and were less likely to enroll in preschool than their counterparts from higher socio-

economic backgrounds.   Implementing curricula that has provided high quality

preschool experiences and academic supports could begin to close the achievement gap.

DISCOVER Theoretical Framework

Discovering Intellectual Strengths and Capabilities while Observing Varied

Ethnic Responses (DISCOVER) —based on the constructivist educational philosophy—

was designed to enhance learning and to assess problem solving abilities in ethnically,

culturally, and linguistically diverse young children. Schiever and Maker (1991)

developed a problem continuum based on the creativity research of Getzels and

Csikszentmihalyi (1967). The problem continuum consisted of 6 problem types: Type I

Problems were simple and closed; both presenters and solvers knew the formula but

solvers needed to find the solution. Type II Problems were simple and closed; presenters

knew the problem, method and solution, but only solvers knew the problem solving

method. Type III Problems were known to the solver but were more open and

complicated, and several formulas could be used to solve the problems. Type IV

Problems were known, but presenters and solvers did not know either the method or

solution. Type V Problems, methods and solutions were not defined clearly for

presenters and solvers; the problems were open and complex. Type VI problems were

completely open-ended and ill-defined.

The problem continuum, in conjunction with Maker's and Nielson's (1996)

principles of curriculum development provided the framework for the DISCOVER

program. The principles of DISCOVER early childhood programs were integrated with

students' culture by incorporating ideologies of successful bilingual education programs

(Cummins, 1984; Nieto, 1996; Ramirez, 1991; Tharp, 1989), and developmentally

appropriate practices (Bredkamp & Rosegrant, 1995; Maker & King, 1996). This was

accomplished by incorporating (a) arts integration—especially visual arts, music, creative

dance/movement, and theater arts; and (b) development of a wide range of problem

solving abilities.

Literacy and Culture

Children have begun to understand the graphological features of written language, an early decoding skill, even before preschool (van Kleeck, 1998). Young children have developed a strong desire to use all of the communicative tools available to them within their families, cultures, and learning environments. They desired to do all of the things that the powerful people they admired could do, including talking, writing, drawing, using the computer, and otherwise creating and sharing ideas and memories (Edwards & Willis, 2000). As children developed speaking and listening skills, they built foundations for literacy and made sense of visual and verbal signs and ultimately for reading and writing. Children have required frequent opportunities to interact with others as they developed these skills and used a wide variety of resources for expressing their understanding, including mark-making, drawing, modeling, reading, and writing. Therefore, the choices children have made as they drew were influenced, in part by their specific sociocultural contexts.

Vygotsky (1978) emphasized social interaction and the influences of culture, peers, and adults on the developing child in his sociocultural theory of emergent literacy acquisition. Vygotsky theorized that children increasingly understood the purposes of oral and written language as they observed how adults employed literacy to construct and communicate meaning, and as they have engaged in literacy activities themselves. Children's creations of micro-communities, or literacy partnerships, during unstructured play and shared literacy activities, such as reading together, have provided opportunities to rehearse the construction and communication of meaning and to engage in representational competence. A child who has experienced difficulty writing letters

might be able to demonstrate progress with the help of an adult who wrote sample letters or helped the child trace letters. Children could build new concepts by interacting with others who either provided feedback about their hypotheses or helped them accomplish a task (McGee & Richgels, 1996). Children have entered school systems with literate practices that have been acquired within dynamic cultural systems with structure, roles, scripts (alphabetic, pictographic), modes of reasoning, and tools.   More ethnically diverse native born and immigrant students have entered classrooms with literacy practices that might operate under different assumptions and cultural norms than the assumptions and norms that characterized school-based literacies.

<center>**Children's Drawing as Literacy**</center>

As children have made connections between spoken and written language, they have extended their understanding to include symbolic forms used to capture speech. Preliterate children developed visual literacy by assimilating new skills such as picture and letter recognition and have taken first steps toward learning to decode and write simple messages.   Edwards and Willis (2000) defined visual literacy as the ability to recognize and understand ideas conveyed through images or pictures. These early experiences with symbolic media that shaped their orientation toward all aspects of reading and writing followed a developmental continuum. The developmental stages of children's drawings or pre-writing skills have been the (a) Scribbling Stage, (b) Pre-symbolism Stage, and (c) Symbolism Stage. These stages of pre-writing were represented in Figure 1.

Scribbling Stage

The Scribbling stage was the random stage of making a mark. Children at this stage of pre-writing focused on the act of moving the writing tool on the surface with some awareness of cause and effect. Children's first disordered scribbles were simply records of kinesthetic activity, not attempts at portraying the visual world.

Pre-symbolism Stage

During the Pre-symbolism stage, improved motor control and eye hand coordination has allowed for more manipulation of materials and more controlled scribbling. Children at this stage enjoyed the result of repeating similar actions, of creating shapes such as circles, spirals, and lines. They may have expanded their shape repertoire to include ovals, squares, and rectangles, as well as wiggly and jagged lines. As children explored basic circles and lines at this stage, they also began to experiment with simple shapes that represented letters to them. They might also have made a few familiar letters repeatedly and *read* them to you.

Symbolism Stage

During the Symbolism stage, children started experimenting with simple representational drawings. Favorite subjects may have included self-portraits, their family, house, pets, vehicles, and nature. At this stage some children have begun to include more detail in their drawings. Drawings might reflect personality and relationships, and were used to communicate feelings and ideas. As drawings have become more representational, writing has become increasingly recognizably letter-based.

Review of Current Literature

Empirical research in the area of early literacy intervention for the preschool population at risk due to socio-economic status has become more prolific as educational accountability is with the required federal mandates and policy concerns. Researchers examined the influences of prior preschool experiences. Skibbe, Conner, Morrison, and Jewkes (2011) researched the effects of preschool experiences on early literacy and language growth during children's first and second years of preschool for children who experienced different amounts of preschool (i.e., one or two years), but who were essentially the same chronological age. Children (n = 76) were tested in the fall and spring of the school year using measures of decoding, letter knowledge, and vocabulary. Using a repeated measure ANCOVA multi-level model, researchers found children finishing their second year of preschool had higher scores, although both groups of children grew similarly during the school year. The first and second years of preschool were both systematically associated with decoding and letter knowledge gains, and the effects were cumulative (i.e., two years predicted greater gains overall than did one year of preschool).

Kuo, Maker, Su, and Hu (2010) developed and conducted an enrichment program for cultivating problem solving abilities and multiple intelligences for preschool students. The assessment and curriculum were based on the DISCOVER model, which included the Problem Continuum. The researchers developed an identification model designed to identify young children from diverse ability levels, ethnicities, or economic levels as gifted. Children (n=61) were screened in a three-stage process that included checklists, interviews, portfolio assessment, group intelligence tests, structured observations, and

individual intelligence tests. Researchers found that most students performed well on all five kinds of problem solving types. Children had scientific thinking characteristics, such as rich knowledge with fascinating imagination and the ability to seek many approaches to solving problems. Children identified as twice exceptional demonstrated progress in social skills and group adaptability.

Research that pertained to the sociolinguistic impact of bilingual education and literacy on young children's growth in literacy incorporated the cultural values, attitude, and beliefs of the home and heritage language to ensure continued understanding and preservation of family ties and cultural heritage (Fluckiger, 2010). These included maintaining heritage language at home, religious rituals, correspondence with relatives overseas, and participation in cultural celebrations. Diversity was viewed as an asset rather than a liability, with differences between home and school practices as alternate beliefs and legitimate forms of practice,

Ashton, Woodrow, Johnston, Wangmann, Singh, and James (2008) attributed children's success at school to the congruence between the practices of home and school, while identifying differences in values, skills, and learning styles—described as cultural dissonance—as inhibiting success. These claims were supported by studies that revealed children from minority cultures generally did not achieve the same success in literacy learning as children from dominant cultures (Purcell-Gates, 1993). As a result, minority children have been left to cope with linguistic and cultural differences on their own, struggling to negotiate between home and school cultures. Culturally Relevant Teaching has been defined as a pedagogy that empowers students intellectually, socially,

emotionally, and politically by using cultural referents to impart knowledge, skills, and attitudes (Ladson-Billings, 1992).

Fluckiger (2010) provided a rich description of culturally relevant literacy practices viewed from a sociocultural lens. She conducted qualitative case study analysis of the experiences of 5 preschool girls and their families who spoke their heritage language in their homes. The researcher conducted interviews with the families and field observations of the girls' classroom literacy experiences. The classroom teacher attempted to build on the rich diversity of resources the children brought to school and to appreciate the complex cultural and social history revealed through their pictures and stories. These stories provided an insight into the lives of the children and the things that were important to them. Through conversations around children's pictures and text, the teacher demonstrated interest, acceptance, and valuing of their experiences and their writing attempts and supported children's identification and manipulation of the dynamic relationships among worlds. Within the classroom environment, the children established themselves as competent community members and demonstrated independent decision making, using writing sessions to provide information and share their knowledge with others, both verbally and through their writing.

Fluckiger (2010) found that the culturally diverse families acknowledged aspects of the dominant culture—while preserving their own—and encouraged their children to adopt preschool practices. These included speaking English at preschool, negotiating their participation in activities, and demonstrating independence. In this way, the children acquired the cultural capital perceived as requisite for educational success at preschool

while maintaining the practices and beliefs of their heritage culture at home. A second benefit was that parents developed knowledge of the dominant culture through their children's experiences.

Fernandez (2000) examined the role of bilingual education in early childhood settings and found that the loss of children's home language may have developmentally catastrophic effects on children. The loss of children's home language may result in the disruption of family communication patterns which may lead to the loss of intergenerational wisdom, damage to individual and community esteem, and children's potential non-mastery of their home language (Soto, 1991;Wong-Fillmore, 1991). Cummins (1997) found that non-English-speaking children required from 5 to 7 years to acquire academic language skills in English; a process that he advocates should begin gradually in the preschool years while using children's native language for concept formation. Furthermore, Narvarez (1983) suggested that verbal and nonverbal communication patterns used by native-speaking children in a bilingual early childhood program increased and were more varied when a supportive native language learning approach was used in the classroom. Garcia (1995) reported an increase in English language proficiency among Native American children, when bilingual instruction occurred. Bilingual education has been defined as a program of instruction that has used and promoted two languages in the education of language minority children, children's native language and, in the United States, English as the second language (Baker & Garcia, 1995).

Despite increased policies, accountability requirements, and pedagogical concerns in early language, literacy, and culture, a gap has existed in empirical research conducted to address the relationship between literacy, language socialization and culture, and preschool experience. The purpose of this study was to examine the influence of prior preschool attendance, culture, and language socialization on early literacy success in drawing/pre-writing skills for kindergarten students at-risk of school failure due to low socioeconomic status. The following questions were answered:

1. What were the similarities and differences between the drawings of Navajo kindergarten children who had attended summer enrichment preschool program and those who had not?

2. What were the similarities and differences between the dictated stories of Navajo kindergarten children in a dual language immersion program and those in an English only program?

Method

Research Design

A qualitative comparative research design was implemented using secondary archival document analysis. Babbie (1997) has defined document or content analysis as the study of recorded human communications. Document analysis has been a way to systematically examine instructional documents with a focused, critical examination of the documents rather than simple description, enabling the researcher to obtain the language and words of participants.

Drawings have allowed researchers to compare values across cultures, ages, and genders, and to elicit more open-ended expressions than they might otherwise achieve

through traditional surveys (Stiles, Gibbons, & Schnellmann, 1987). For this study, the researcher examined differences and similarities in drawings and dictated stories as secondary archival data. Drawings were collected to better understand children's family life (Fury, Carlson, & Sroufe, 1997; Lev-Wiesel & Al-Krehawi, 2000), friendships and peer interactions (Bombi & Pinto, 1994; Pinto, Bombi, & Cordioli, 1997; Rubenstein, Feldman, Rubin, & Noveck, 1987), and children's many and varied perceptions of the world around them (Alerby, 2000; Barraza, 1999; McLernon & Cairns, 2001; Moore & Kramer, 1993; Walker, Myers-Bowman, & Myers-Walls, 2003). Bishop (2007) defined secondary data as information that has been collected for another purpose, but might be reanalyzed in a subsequent study. Qualitative data reanalysis has provided a unique opportunity to study the raw materials of the past to gain insights for both methodological and theoretical purposes.

Participants

   Group A. Participants were 30 purposefully selected kindergarten students who had attended a community controlled Navajo reservation school. Students were from a community controlled school district, which had 500 students in grades K-12. The school district provided a dual immersion Navajo bilingual language model. Students attended a one month pre-kindergarten summer school program based on the DISCOVER model prior to kindergarten attendance.

   Group B. Group B participants were 35 purposefully selected kindergarten students from a BIA-controlled Navajo reservation boarding school located in the heart of the Navajo Nation. The district serving the educational needs of the community had 7

schools, over four thousand students in grades K-12, and was the largest school district in the Navajo Nation in both student count and geographic area. The school district provided instruction in English, implementing an English immersion model.

Setting

Group A. Located in the middle of the Navajo Nation in the Southwestern United States, English-as-a-second-language instruction was started in 1960 and bilingual instruction in 1967. Forty-three per cent of students in 1988 were dominant Navajo speakers while only five per cent were dominant English speakers. Under the bilingual curriculum instituted in 1967, kindergarten students have been taught reading in Navajo with English reading instruction in second grade. In 1972, to provide quality Navajo education through local community control, the community elected a school board, that contracted with the BIA to operate it as a K-6 elementary school so they could have more control over hiring and curriculum. The community continued to contract to operate the school under Public Law 638, the Indian Self-determination and Assistance Act. By 1998, the percentage of students who were dominant Navajo speakers had changed to 25 and those who were dominant English speakers were in the majority (75%). However, to preserve Navajo language usage in the community, educators have continued to provide a dual-immersion bilingual program. The bilingual program has been described as being both a coordinate and a maintenance bilingual program. Instruction in the two languages was kept separate but complementary. Instruction was not repeated in each language, but concepts introduced in Navajo were reviewed in English. Some teachers taught only in English and others only in Navajo. In kindergarten, two-thirds of the instruction was in

Navajo with the rest of the time spent teaching students oral English. By second grade

students were receiving half their instruction in English and half in Navajo. In the upper

grades from fifteen to thirty per cent of the instruction was in Navajo with the rest in

English.

Group B. The District included seven surrounding communities, and school

buses traveled over 5,200 miles on daily routes to transport students to and from schools.

The high school has been the largest primarily Native American public high school in the

United States. Ninety-seven percent of the students were Native American. Due to

geographical distance, elementary students attended the BIA boarding school. Students

did not attend public preschool.

DISCOVER Summer Enrichment Program

The DISCOVER summer enrichment program was a one month program with a

bilingual education model. An English language teacher and a Navajo language teacher

served 20 children in a morning session and 20 children in an afternoon session.

Teachers involved in the project received in-service education related to curricular

objectives and methods on an individual, small group, and large group basis.

The DISCOVER teaching methods and curricula consisted of an integration of

language development in two languages using whole literacy, problem solving in a

multicultural context, multiple intelligences abilities development, and individual student

choice. Curricular and teaching strategies have been characterized by (a) integrated,

interdisciplinary content; (b) higher-order thinking, appropriate pacing, self-directed

learning, and complex problem solving processes; (c) development of unique products for

real audiences; and (d) student interaction, interaction with experts, and learning

environments with physical and psychological flexibility, openness, and safety.

Teachers, using DISCOVER, promoted rich learning environments with students making

choices based on interest and ability integrated into individual, small group, and whole

group formats. Teachers' roles were to be resources rather than dispensers of knowledge

(Maker, 1982; Maker & King, 1996; Maker & Nielson, 1995, 1996).

DISCOVER assessment was authentic as a method to characterize individual

patterns of growth and development. Pett (1990) characterized authentic assessment as

performance based, realistic, and instructionally appropriate. DISCOVER assessment

included observations, anecdotal records, checklists, portfolios, and play-based

assessment. A profile of multiple intelligences strengths was created for each child; both

parents and teachers learned how to use the child's strengths in developing needed

academic skills and creativity.

Data Collection. Data were collected by obtaining students' archived drawings

during the kindergarten school year. The drawings were completed during the process of

assessing children's giftedness and multiple intelligences strengths. Children drew

pictures and told a teacher about them. Children then dictated their stories as the teacher

wrote their exact language on or near the page with the picture. Children may have

written their own stories using invented spelling. Recording children's exact language

allowed a realistic assessment of each child's abilities.

Data analysis. Creswell (2009) found that the process of data analysis involved making sense out of text and image data. The following steps were used to analyze and compare kindergarteners' drawings and dictated text for differences and similarities:

6. Data were organized and prepared by sorting and arranging stories and drawings into categories based on independent variables.

7. Data were reviewed to obtain a general sense of the information and to reflect on the overall message.

8. A detailed analysis was conducted to organize and analyze the data, segmenting images, sentences, and words to derive meaning.

9. A coding process was employed to generate a description of themes for analysis. Themes were used to code findings in participants' drawings and dictated stories.

10. Descriptions and themes were represented in a narrative format.

11. Data were viewed and interpreted through a sociocultural theoretical lens.

agreement between raters on the assignment of variables. It was an important measure in determining procedural consistency in implementation of coding. To ensure procedural consistency, a second rater independently rated 25% of drawings and dictated stories. Documents that were rated identically by both raters were considered agreements. Documents rated differently were considered to be disagreements. IRA was determined by dividing the number of agreements by the number of agreements plus the number of disagreements and multiplying the result by 100%. IRA was determined to be 98%. Validity of this study was strengthened by peer debriefing to enhance the accuracy of

information (Creswell, 2009). Colleagues reviewed and questioned the study to provide an interpretation beyond that of the researchers.

Results

What were the similarities and differences between the drawings of Navajo kindergarten children who had attended preschool and those who had not?

Similarities. Sociocultural influences were evident in the subject content of Navajo children's drawings who had attended preschool and those who had not. Drawings were inspired by events occurring outside of the school setting and consisted of topics such as landscapes (42%), people (23%), prior experiences (23%), and animals (12%). Drawings included landscapes with elements that expanded across the page in a series of horizontal ground, mountains, or skylines. A yellow circular sun at the top of the page and a straight line at the bottom were symbolic representations of the sky and ground. Cultural elements were noted in the drawings of teepees, rodeo and farm animals, and cacti (see Figure 2). Sociocultural influences also were noted in the likeness of drawings. Teachers noted that students with similar drawings sat in close proximity (see Figure 3).

Differences. While all of the drawings reflected the influence of culture, several differences were noted between the drawings of Navajo kindergarten children who had attended preschool and those who had not. These differences were found in the complexity and depth of the drawings.

Group A. The drawings of Navajo kindergarten children with previous preschool

attendance (Group A) were more complex and included more representational details.

Symbolic representations for human figures included body parts, facial features, and hair,

and were not stick-like. People were represented with varying facial expressions.

Figures of adults were represented proportionately appropriate to figures of children.

Drawings of people were grounded on the page by a baseline that acted as a horizon line.

In Group A drawings (67%), baselines were used to show distance or topography. This

was represented by a drawing of a teepee in the foreground with mountains in the

background of the picture. Group A kindergarteners (13%) drew a series of pictures,

similar to a cartoonist's panes, to sequences the story over a period of time. Drawings

(30%) demonstrated shadows and shading with colors used to depict landscapes or to

signify the importance a specific element (Kress & Van Leuven, 1996). This was shown

in the shaded drawings of houses and teepees with a moon and stars depicting a night

sky. Color made these elements stand out in the drawing as a composition (see Figure 4).

    Group B. The drawings of Navajo kindergarten children who had not attended

preschool (Group B) were often represented as circular or angular forms drawn as

symbols to represent real objects in their environment or to reflect their stories. Circles

and lines were combined to draw figures of people, houses, or trees. People were drawn

with a large head, eyes, arms, and legs, with other body parts and details omitted (17%).

Figures (43%) were drawn floating in space or without background spatial details. Group

A kindergarteners did not include letters in their drawings. When Group B

kindergarteners drew or wrote alphabetic letters, they used them as a string of one or two

letters on the page instead of pictures or figures (see Figure 5). The similarities and

differences in the elements of drawings of Navajo kindergarten children who had attended preschool and those who had not are shown in Table 1.

Children's developmental stages of drawings were used to assist in framing and understanding Navajo kindergartener's drawings as literacy development.

Scribbling stage. Navajo kindergartener's drawings at the Scribbling stage of development exhibited randomly made marks or an exploration of art materials. Scribbles progressed from uncontrolled to demonstrating more control. Some scribbles were named. None of the drawings of Navajo kindergarteners who had previously attended preschool were representative of the Scribbling stage of development. Of Navajo kindergarteners without previous preschool attendance, 17% of students' drawings were in the Scribbling stage of development.

Pre-symbolism stage. Navajo kindergartener's drawings at the Pre-symbolism stage of development showed some recognizable representations, although they were usually unrealistic. Children used their favorite colors to draw, rather than represent objects in more accurate colors. Drawings of people were very simple with few features and drawn with very large heads with extended arms or legs drawn from the head. Objects were drawn floating in space without an anchor. Although of varying degrees of complexity, none of the drawings of Navajo kindergarteners who had previously attended preschool were representative of the Pre-symbolic stage of development. Of Navajo kindergarteners without previous preschool attendance, 31% of students' drawings were in the Pre-symbolism stage of development.

Symbolism stage. Navajo kindergartener's drawings at the Symbolism stage of

development were more proportionate and detailed. Colors were more realistic and

stereotypically represented. Skylines and ground lines were visible in drawings and a

schema was shown in figures being similar within the drawing. All of the drawings of

Navajo kindergarteners who had previously attended preschool were representative of the

Symbolism stage of development, with 52% of Navajo kindergarteners without previous

preschool attendance at this stage of development. The stages of drawings as literacy

development of Navajo kindergarten children who had attended preschool and those who

had not are shown in Table 2.

What were the similarities and differences between the dictated stories of Navajo

kindergarten children in a dual language immersion program and those in English

only programs?

Navajo kindergarten children in both a dual language immersion program

(Group A) and an English only program (Group B) were able to bring to the classroom

their interests and experiences by telling their stories or experiences orally—based on

their drawings—and having their teacher record the account using the student's words

verbatim. Story elements of (a) complexity of expression, (b) voice, and (c) fluency were

used to categorize and analyze the themes of the dictated stories.

Complexity of expression. Complexity of expression was the term used to describe

the quality or intricacy of language children chose to label, describe, or express their

ideas in the dictated stories. Similarities and differences were found in the quality and

quantity of word choices by Navajo kindergarteners.

Similarities. Navajo kindergarten children in both a dual language immersion

program and

an English only program used word choice to convey messages that varied in complexity.

Vocabulary words were limited to known or familiar words, with repetition of known

words. When stories were more complex, words were grouped in ways to begin to create

a mental image of the message and to convey a complete message. Word choices

included common vocabulary words that were used appropriately.

Differences. Differences between the dictated stories were noted in the complexity

of expression.

Group A. In Group A, 67% of kindergarteners' dictated stories consisted of

variety in parts of speech to convey and enhance meaning, with words used to create

memorable phrases or mental imagery (capable). In Group A, 23% of kindergarteners'

dictated stories included simple details (developing). In Group A, 10% of

kindergarteners' dictated stories labeled objects in drawings (beginning). Group A

dictated stories were used more often to recount personal experiences.

> Group A Girl: *"The sun shines on the people and they get hot. They sit in the*
>
> *tepee. Some kids, they play in the rocks. The brother plays outside. The mom*
>
> *cooks for the kids. She reads to the kids. Then the dad works. The kids were*
>
> *playing in the house. They eat together. They played around. The played. They*
>
> *ride. They did their homework. The put the clothes on. They wiped their face.*
>
> *They play. They try something. They drink. They wash their teeth. Then they go*
>
> *to bed. Then they go to school. They see their teacher and then they go home."*

Group B. In Group B, 35% of kindergarteners' dictated stories consisted of variety in parts of speech used to convey and enhance meaning, with words used to create memorable phrases or mental imagery (capable). In Group B, 34% of kindergarteners' dictated stories included simple details (developing). In Group B, 31% of kindergarteners' dictated stories labeled objects. Stories dictated by Navajo kindergarteners in the English only program were less complex and more repetitious.

> Group B Boy: *"This is my house, then there is a boy. There's ground and a door.*
> *That's it."*

> Group B Boy: *"I went to Farmington. I saw a rabbit. I saw a mouse. I spended*
> *the night there. I…Then I went back home."*

Voice of dictated stories. Voice was defined as the author's personality or style in the expression of emotion or commitment to the topic of writing. The author's voice could convey attitude or character and add uniqueness to the dictated story.

Similarities. Similarities between groups were evident in the Navajo kindergarteners' use of personal voice or narrative in the recounting of daily events embedded with cultural references or elements. Dictated stories included simple emotions or actions. Feelings were expressed with familiar words.

> Group A Boy: *"I was riding the horse. And I see a smoke. I go in the teepee in*
> *the rock. I just jump on the rocks. I picked the horse in the*
> *house. I just killed the snake. I My granda was standing by the*
> *teepee. My mom went outside and drive the sheep. And my mom*

went to the store. My mom buyed some more pop. I went outside

and drinked the pop. I ate some sandwhich."

Group B Girl: *"There was a big sister. There was a little sister. There's a*

boat in the water. The big sister was playing house. The little

sister was crying cause the big sister made her cry."

Differences. Differences were found in the developmental voice of the dictated stories. Group A, 67% of kindergarteners developed four or more dictated sentences related to one topic with a clear message and a related drawing (capable). In Group B, 54% of kindergarteners developed four or more sentences related to one topic with a clear message and a related drawing. In Group A, 33% of kindergarteners developed two to four dictated sentences related to one topic with a clear message and a related drawing (developing). In Group B, 14% of kindergarteners developed two to four sentences related to one topic with a clear message and a related drawing. In Group B, 37% of kindergarteners did not have a developed sentence and a related drawing (beginning).

Fluency in dictated stories. Sentence Fluency was defined as the rhythm and flow of language and the sound of word patterns. Sentence fluency has been referred to as to the way individual words and phrases sound together within a sentence, and how groups of sentences sound when read. Sentence fluency was increased by expanding the variety of the sentence structure and the length of the sentence. Sentence fluency contributed to the readability of the dictated stories.

Similarities. Navajo kindergarten children in both a dual language immersion program and an English only program were developing sentence fluency and had a

limited sample of sentence patterns, with most sentences beginning the same way.

Dictated stories were structured with simple sentence patterns (contained a subject, a

verb, and a complete thought, with one independent clause).

Group A Boy: *"This is my house. This is my dogs looking for fox. My horse is in the car. The cow born a baby cow there in corral."*

Group B Girl: *"It was sunny. I was playing outside with my sister. It was grassy. My mom was cooking and I was playing outside."*

Differences. Group A differences in fluency were found in the ability to use

connective transitions that served as links between phrases. Patterns and rhythm were

present, but were mechanical rather than fluid. Group B sentence fluency was

representative of connective words present, but used in a simple way. Patterns and

rhythm were choppy and repetitive.

Group A Girl: *"My mom told me to go outside to get a fish to cook it. My mom said, "I am going to the store to get some sugar and salt." Then she said, if you caught a fish put it in the bucket and put it on the table."*

Group B Girl: *"A snake, a house, too many snakes, and a heart house, butterfly, tree, dog, horse, my mom, a house, cloud, hearts."*

In Group A, 67% of kindergarteners used a limited sampling of sentence patterns

(capable). Connective words were shown with some variety. In Group a, 33% of

kindergarteners used simple sentence elements with some repetition (developing). In

Group B, 28% of kindergarteners used a limited sampling of sentence patterns (capable).

In Group B, 46% of kindergarteners used sentence elements with some repetition (developing). In Group B, 26% of kindergarteners dictated words without connective elements (beginning).

Discussion

Similarities were evident in the sociocultural influences reflected in the subject content of Navajo children's drawings who had attended preschool (Group A) and those who had not (Group B). Navajo kindergarteners were inspired by events occurring outside of the school setting and included topics such as landscapes and homes, people, and animals. This is consistent with Mills' (1959) findings that Navajo children are influenced by traditional Navajo images, and predominantly draw representational images of homes, mesas, and animals.

Sociocultural influences are representative of the traditional Navajo way of learning from observation and imitation (Kravagna, 1971). This practice is reflective of Vygotsky's theory of social interaction, in which culture, peers, and adults influence the developing child. Children gain ideas from one another when sitting together to draw. Several Navajo kindergarten drawings and stories are nearly identical. Pahl (1999) found that children often copy each other and ideas tend to be shared among children working together. Peer teaching and copying has been highly regarded in Navajo culture, with children learning from one another and gaining an early sense of independence from adults.

> *"Drawing, as spontaneous un-coded language, provides a medium for*
>
> *articulation and expression. While the verbal codes of literacy are being*

internalized, drawing is the primary medium for all language values except

practical communication, in other words for expressing subtle and complex

perceptions, thoughts and feelings" (Steel, 1997, pp. 25).

Differences were noted between the drawings of Navajo kindergarten children

who attended preschool and those who had not in the complexity and depth of the

drawings. The drawings of Navajo kindergarten children with previous preschool

attendance were complex and included representational details. All of students' drawings

with previous preschool attendance were in the Symbolic Stage, which is

developmentally typical for children from ages 5 to 7. In students who had not attended

preschool, 52% were at the Symbolic Stage of drawing development. Participation in the

DISCOVER preschool summer program for Navajo kindergarteners at risk due to low

socio-economic status was beneficial in student's acquiring critical early literacy skills by

providing a targeted cultural educational enrichment opportunity to better prepare

students for formal reading instruction in kindergarten and early elementary school.

Campbell and Ramey (1994) found that early education programs designed to

promote academic abilities, especially for children from disadvantaged backgrounds,

were linked to lasting effects on indicators related to student achievement. Children who

attended preschool tended to enter school with increased literacy and language skills and

tended to keep that advantage across the years over peers who did not attend preschool.

Literacy achievement is consistently and positively associated with preschool attendance

and resulted in a positive transition to kindergarten. Similarities in dictated stories of

Navajo kindergarten children in a dual language immersion program and those in English

only programs are found in the complexity of expressions. The dictated stories of both Group A and Group B show evidence of developing or capable skills in complexity of expression. This is developmentally typical of kindergarten students. Students use word choice to convey messages with varied complexity. Vocabulary words are limited to known or familiar words, with repetition of known words. When stories are more complex, words are grouped in ways to begin to create mental imagery of the message and convey a complete message.

Differences between dictated stories of Navajo kindergarten children in a dual language immersion program and those in English only programs were noted in voice and fluency of the stories. Differences were found in the developmental voice of the dictated stories. All of Group A kindergarteners are within the capable or developing range of demonstrating voice in a story while 54% of Group B kindergarteners are within the beginning range of demonstrating voice in a story. All of Group A kindergarten students are within the capable or developing range of story fluency, while 28% of Group B kindergarteners are within the beginning stage of story fluency.

The influence of education in a dual language can be viewed in these results. Dual language immersion programs create an environment in which two languages and cultures are valued equally, the minority language and culture are assigned a status equal to that of the majority language and culture. According to Genesee (1999, n.p.), "Dual-language programs...conceptualize non-English languages as a resource for English learners and as enrichment for English speakers. Thus, by valuing other languages, dual-language programs give these languages, and their speakers, greater prestige." Students

in dual language immersion programs develop full oral, reading, and writing proficiency in two languages. This allows them to see their first language in a comparative perspective, which in turn helps them analyze and refine their language use (Cazabon, Lambert, & Heise-Baigorria, 2002). Students not only achieve at levels that are similar to or higher than those of their peers enrolled in other programs on standardized tests of reading and math in English, but in addition they are able to read and write at grade level in another language. Participation in the DISCOVER preschool summer program for Navajo kindergarteners at risk due to low socio-economic status was beneficial in student's acquiring critical early literacy skills by providing a targeted cultural educational enrichment opportunity to better prepare students for formal reading instruction in kindergarten and early elementary school.

Implications for Practice

Research on improving the early literacy achievements of students at risk for educational failure has implications for educational policy. State and local policymakers can allocate resources to ensure that new knowledge about curricula and professional development is used to improve instructional practice. The need for all young children to be better prepared to enter school ready to learn is evident. Researchers found that the literacy learning strategies thought to be most effective were consistent with conclusions described in the Report of the National Reading Panel (National Institute of Child Health and Human Development, 2000). Early literacy education for young children at risk for educational failure is most effective when instruction is provided by knowledgeable teachers in collaboration with the family and community. This requires a program of

instruction that is thoughtful and purposeful such as DISCOVER. Policy-makers should address the needs of diverse young learners by implementing a systems approach to early literacy in a culturally inclusive preschool environment that includes the following components (a) a comprehensive language and literacy based program of instruction to who are at risk of educational failure, (b) ongoing teacher professional development and mentoring opportunities, (c) family, school, and community partnerships.

Language and Literacy. Federal and state legislators have emphasized evidence-based practice to guide curriculum and instruction. Evidence must be grounded in scientifically based research, which is the application of systematic and objective procedures to obtain information to answer within a field. The purpose is to ensure that the consumers of research will have a high degree of confidence that it is reliable and valid. Aspects of this summer program that were designed to support the development of early literacy skills included (a) dual language immersion; (b) higher-order thinking, appropriate pacing, self-directed learning, and complex problem solving processes; (c) parent involvement; (d) integrated, interdisciplinary curriculum content; (e) student interaction and interaction with experts; and (f) learning environments with physical and psychological flexibility, openness, and safety.

Professional Development. The need for highly capable teachers is a constant theme in early childhood education literature (Strickland & Riley-Ayers, 2007). National and government mandates have increased the expectations and educational requirements of early childhood teachers for federally and state funded preschool programs (U.S. Department of Health and Human Services, 2003). Early childhood teachers need to be

able to promote a range of cultural language and literacy practices and strategies to foster appropriate development and assessment.

   Family, School, and Community Partnerships. The main goal of parent involvement partnerships is to raise students' academic achievement. Effects of home environments on school learning are significant and well documented in the research literature. Convincing evidence exists that parents make significant contributions to their children's school outcomes (Fan & Chen, 2001). Parent participation in a child's education is associated with increased achievement motivation, reduced dropout rate, and improved social behavior and interactions with peers. Family, school, and community partnerships are important for supporting competencies in young children and can ensure their school success. When partnerships are established and maintained, children may have more positive school experiences because these resources are available (Kraft-Sayre and Pianta, 2003). For example, if parents have positive relationships with their children's teachers, then teachers and parents can work more effectively together to support children's educational progress.

Implications for Research

   This study has implications for future research in the area of Culturally Responsive Teaching in a dual language immersion model. Educators implementing Culturally Responsive Teaching recognize the importance of including students' cultural references in all aspects of learning (Ladson-Billings, 1994). Culturally responsive educational systems are grounded in the belief that culturally and linguistically diverse students can excel in academic endeavors. Culturally responsive pedagogy and practice

facilitates and supports the achievement of all students. In culturally responsive classrooms and schools, effective teaching and learning occur in a culturally-supported, learner-centered context, where the strengths students bring to school are identified, nurtured, and used to promote student achievement. Participation in the DISCOVER preschool summer program for Navajo kindergarteners at risk due to low socio-economic status was beneficial in student's acquiring critical early literacy skills by providing a targeted cultural educational enrichment opportunity to better prepare students for formal reading instruction in kindergarten and early elementary school.

Limitations

Participants in this study were limited to Navajo kindergarteners in two schools in the southwestern United States. This may limit the generalizability of the study to other schools on the Navajo Nation.

<center>**Conclusion**</center>

This study was conducted to examine the influence of prior preschool attendance, culture, and language socialization on early literacy success in drawing/pre-writing skills of kindergarten students at risk of school failure due to low socioeconomic status. The preschool years are critical to the development of emergent literacy skills that will help prevent later reading problems (Pullen & Justice, 2003). Early literacy skills are the best predictors of later achievement in reading and oral language (Adams, 1990; Snow et al, 1998). I have demonstrated through this research that children who attend preschool tend to enter school with increased literacy and language skills and tended to keep that advantage across the years over peers who do not attend preschool. The DISCOVER

early education summer program was designed to promote the heritage culture in conjunction with academic abilities, especially for children from disadvantaged backgrounds, and can be linked to lasting effects on indicators related to student achievement. Literacy achievement has been consistently and positively associated with preschool attendance, and reflected favorable outcomes for later school success.

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Table 1

Problem Types in the DISCOVER Curriculum and Assessment Models

Problem Types	Problem		Method		Solution	
Solver	Presenter	Solver	Presenter	Solver	Presenter	Solver
I	K	K	K	K	K	U
II	K	K	K	U	K	U
III	K	K	R	U	R	U
IV	K	K	U	U	U	U
V	K	K	U	U	U	U
VI	U	U	U	U	U	U

Note. K = Known; U = Unknown; R = Range, by Maker, C.J. & Schiever, S.W. (2005). *Teaching/Learning models in education of the gifted*. (3rd ed.). Austin, TX: Pro- Ed.

Table 2

Elements in Drawings of Navajo Kindergarteners

Elements	Percentages	
	Group A (n=30)	Group B (n=35)
Homes & Landscapes	40	40
People	53	34
Animals	27	14
Prior Experiences	43	31
Shadows & Shading	30	14
Series of Pictures	13	0
Topography	67	0
Floating Figures	3	43
Alphabetic String	0	11

Note. Group A consisted of Navajo students with previous preschool attendance in a DISCOVER summer program. Group B consisted of Navajo students with no previous preschool experience.

Table 3

Developmental Stages of Drawings as Literacy Development

Stage	Percentages	
	Group A (n=30)	Group B (n=35)
Scribbling	0	17
Pre-symbolism	0	31
Symbolism	100	52

Note. Group A consisted of Navajo students with previous preschool attendance in a DISCOVER summer program. Group B consisted of Navajo students with no previous preschool experience.

Table 4

Elements in Dictated Stories of Navajo Kindergarteners

Elements	Percentages					
	Beginning		Developing		Capable	
	Group A	Group B	Group A	Group B	Group A	Group B
Complexity of Expression	10	34	23	31	67	35
Voice	0	54	33	14	67	37
Fluency	0	26	33	46	67	28

Note. Group A consisted of Navajo students with previous preschool attendance in a
DISCOVER summer program. Group B consisted of Navajo students with no previous preschool
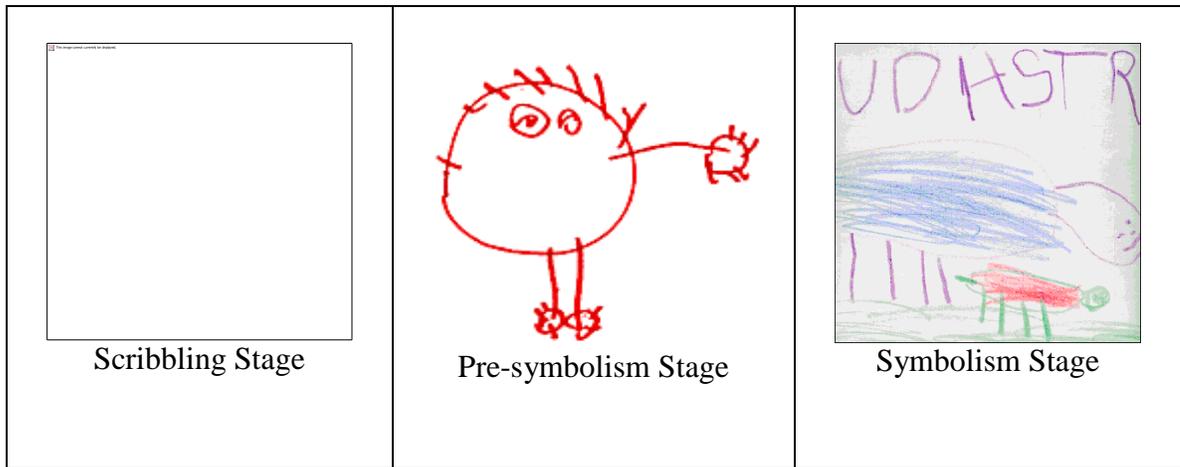experience.

Figure 1. Developmental Stages of Children's Drawings

| Scribbling Stage | Pre-symbolism Stage | Symbolism Stage |

Figure 1. Pre-writing or early writing stages developed inter-relatedly and concurrently with literacy in young children who were actively engaged in understanding how written language was used. Drawings were analyzed using the stages identified by Schickedanz, J. (1999). Much more that the ABC; the early stages of reading and writing. Washington DC: National Association for the Education of Young Children.

Figure 2. Sociocultural Influences on Navajo Children's Drawings

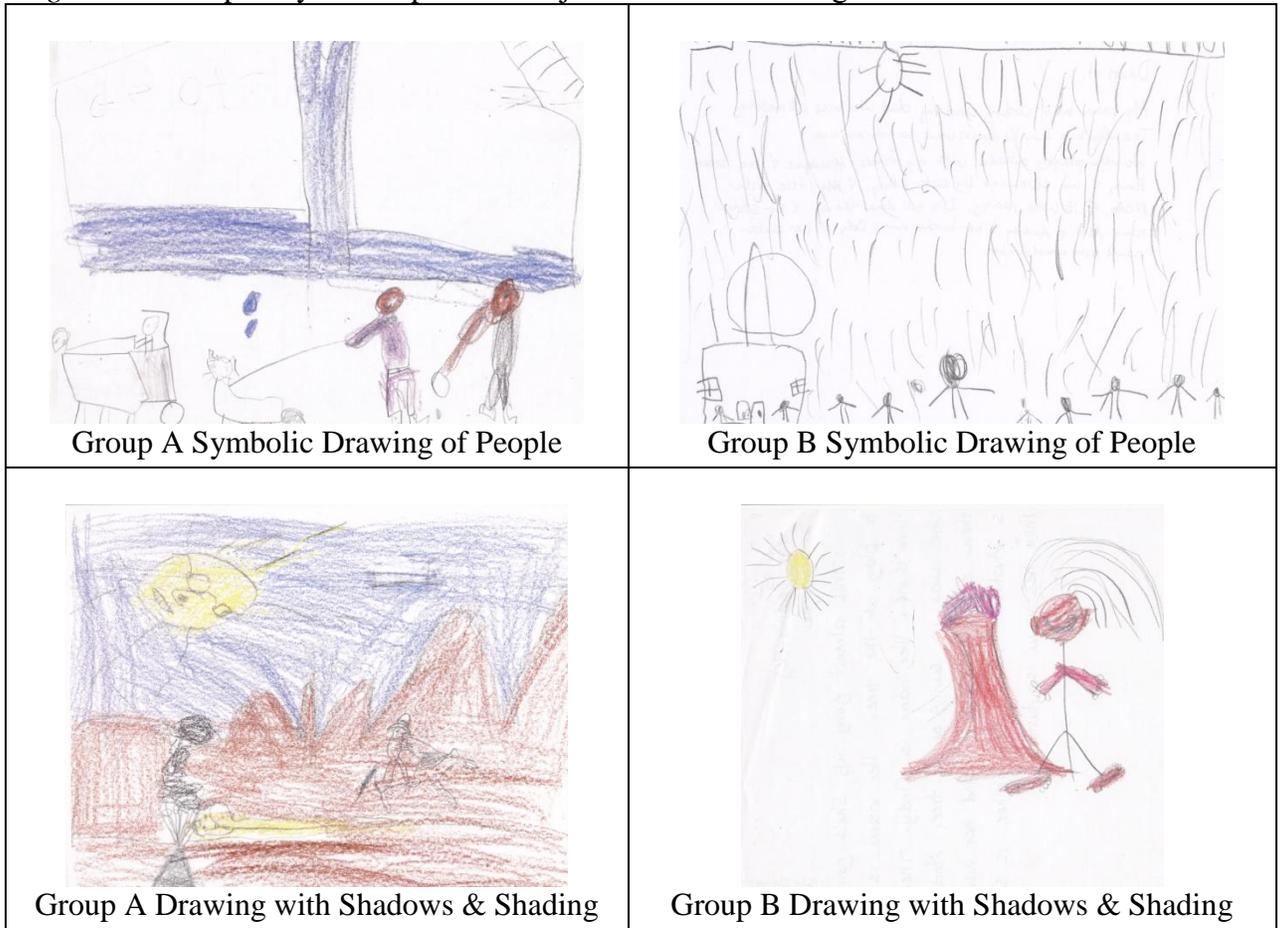| Group A Drawing of Landscape | Group B Drawing of Landscape |

Figure 2. Sociocultural similarities were noted in the subjects of Navajo children's

drawings. A yellow circular sun at the top of the page and a horizontal line at the bottom

of the page were symbolic representations of the sky and ground. Cultural elements

included drawings of homes and familiar landscapes.

Figure 3. Likeness in Navajo Children's Drawings

| Kindergarten Boy: Group A Drawing | Kindergarten Girl: Group A Drawing |
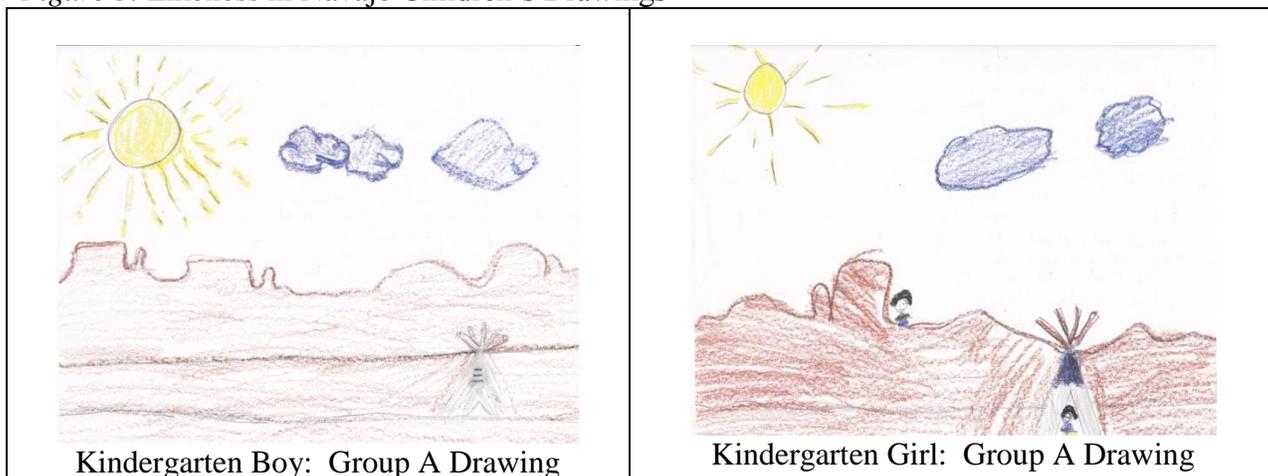
Figure 3. Sociocultural influences were noted in the likeness of Navajo children's drawings. Likeness in drawings is reflective of the traditional Navajo way of learning from observation and imitation. Teachers noted that students with similar drawings sat in close proximity to one another.

Figure 4. Complexity and Depth of Navajo Children's Drawings

| Group A Symbolic Drawing of People | Group B Symbolic Drawing of People |
| Group A Drawing with Shadows & Shading | Group B Drawing with Shadows & Shading |

Figure 4. Sshadows and shading were used to depict landscapes or to signify the importance a specific element. Color made these elements stand out in the drawing as a composition.

Figure 5. Alphabetic Letters in Navajo Children's Drawings

| Group B Drawing I of Alphabetic Letters | Group B Drawing II of Alphabetic Letters |
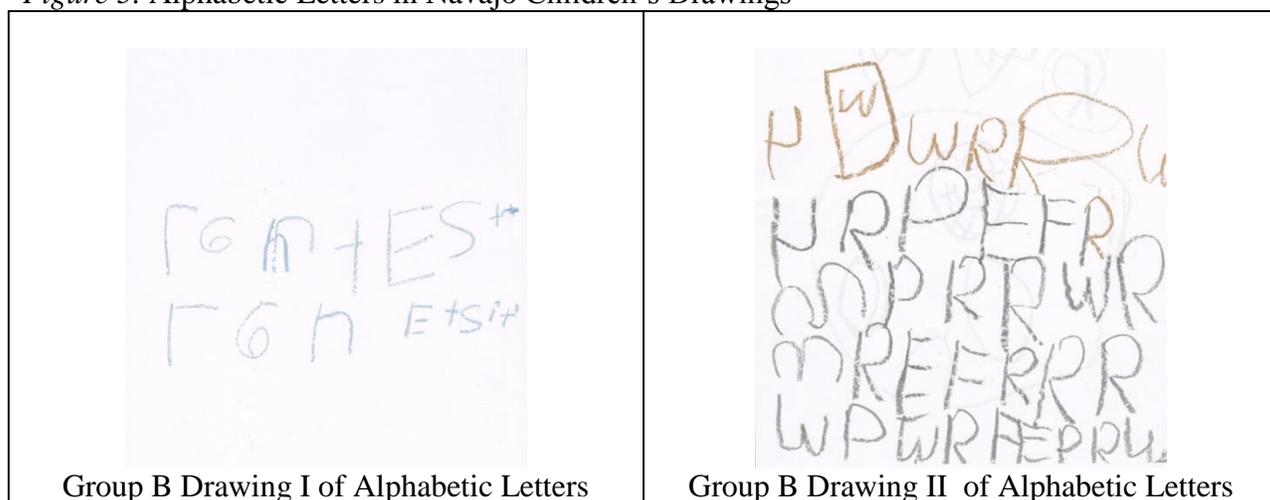
Figure 5. Group B kindergarteners drew or wrote alphabetic letters as string letters on the page instead of pictures or figures.

Appendix C

EMBEDDED-EXPLICIT TEACHING IN EARLY LITERACY WITH

AT-RISK STUDENTS

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Abstract

The embedded–explicit method of emergent literacy intervention is an integrated approach to emphasize practices associated with both orientations. The purpose of this study was to use an embedded-explicit teaching method to increase the early literacy skill of alphabet letter recognition in preschool children at risk due to developmental or economic disadvantage. Participants in this study were three children ranging in ages from 3.9 to 4.5 years who received preschool services from a public school early learning center whose level of literacy learning was below that of their classroom peers. The results of this study were consistent with the hypothesis that an embedded–explicit Response to Intervention model of early literacy intervention was effective in increasing alphabet letter recognition.

Keywords: embedded-explicit, Response to Intervention, early literacy

Embedded-Explicit Teaching in Early Literacy with At-Risk Students

Children have developed literacy skills from the first year of life— in conjunction with speech and language development— that continued throughout the preschool years and has been essential to later literacy acquisition and long term academic success (Gettinger & Stoiber, 2008). Early literacy skills have included pre-literacy activities such as (a) letter naming, (b) letter-sound correspondence, (c) naming pictures, (d) scribbling, (e) drawing pictures, (f) telling stories, (g) writing one's name, and (h) identifying letters of the alphabet. All of these activities have helped young children learn to read and write. Children have been referred to as an emergent readers before receiving formal reading instruction in school.

The term emergent literacy was developed by Marie Clay to describe her observations of young children's behaviors when using books and writing instruments to imitate reading and writing activities (Alexander & Slinger-Constant, 2004). The theory of emergent literacy developed from research in the fields of child development, psychology, education, linguistics, anthropology, and sociology. Advocates of the emergent literacy theory have taken a broader view of literacy that has included the importance of early childhood literacy learning in children's acquisition of formal reading and writing skills (Simmons, Kameenui, & Chard, 1998). Embedded literacy instruction is a method to focus on the unique value of children's self-initiated, naturalistic, and contextualized interactions with oral and written language that are embedded throughout the day. There has been an emphasis on children's expression of meaning and intent through their literacy acts, and the social value of literacy behaviors.

An additional emphasis of embedded approaches has been the role of adults as facilitators of children's learning, and the influence of social interactions and child–adult relationships on children's literacy development (Justice & Ezell, 1999; Watkins & Bunce, 1996). The importance of explicit instruction for the development of discrete skills has been emphasized. Unlike embedded models, explicit models are a more decontextualized and direct route to enhance basic skill units.

Children have developed literacy skills in a multitude of ways and at different ages. Most children have gained early literacy skills naturally and incidentally through their interactions with supportive parents, caregivers, and extended family members.   Children have been at risk for experiencing later difficulties in acquiring literacy skills due to factors such as exhibiting developmental delays or disability, learning English as a second language, or lack of access to literature rich environments due to low socioeconomic status (Whiteley, Smith, & Connors, 2007).

Preschool children who have experienced early reading difficulty have been at an increased risk for entering kindergarten without an adequate foundation for developing the higher-level literacy skills needed for school success. Children have entered kindergarten with more variability in school readiness, influenced by environmental and developmental factors that place them at risk for school failure. Unfortunately, children who have entered kindergarten with limited literacy and language skills rarely caught up with their peers (Justice & Pullen, 2003). These deficits in early reading skills have remained or increased

through elementary school, thus widening the gap between children who have strong literacy skills and those who do not (Gettinger & Stoiber, 2008).

During the last decade, a tremendous increase in applied studies of the effectiveness of literacy interventions for young children at-risk for later reading difficulties. Researchers have argued the importance of early attainment of literacy skills to children's later achievements in skilled reading by developing effective models of literacy intervention to reduce the likelihood of later reading difficulties. The value of early interventions for supporting literacy skills in young at-risk children as well as advantages of such interventions for influencing later reading achievements have been demonstrated (Chow & McBride-Chang, 2003; Justice & Ezell, 2000, 2002; Neuman & Roskos, 1993; O'Connor, Jenkins, Leicester, & Slocum, 1993; van Kleeck, Gillam, & McFadden, 1998; Whitehurst et al., 1994, 1999). Emergent literacy intervention and reading development current best practices in emergent literacy intervention has been complicated by the limited empirical data confirming the value of specific intervention approaches (Goldberg, 2003). Interventions have been developed and evaluated to support emergent literacy in young children typically featured an embedded or an explicit orientation. The embedded–explicit method of emergent literacy intervention is an integrated approach to emphasize practices associated with both orientations. The purpose of this research was to employ a single subject research design in exploring the following question: Does an embedded-explicit teaching model increase the critical emergent literacy skill of alphabet recognition in preschool children at risk due to developmental or economic disadvantage?

Method

Participants

      Participants in this study were three children ranging in ages from 3.9 to 4.5 years with literacy skills below that of their classroom peers. Participants exhibited developmentally delays in communication and exhibited delays in acquiring literacy skills in comparison to peers as measured by standardized data from the Preschool Language Scale Fourth Edition (PLS-4), the Developmental Assessment of Young Children (DAYC), and Teaching Strategies Gold developmental continuum. Participants received partial day preschool services (ten hours per week) in a developmentally appropriate early childhood center serving children from birth to five years of age of all abilities in an inclusive setting.

      Participants resided in an urban school district in the Southwestern United States. The percentage of students identified as minority was 94.4%, 83.62% of students qualified for free or reduced-price meals, and 32% were classified as English language learners. Approximately 14% of the district's student population received Special Education services.

Setting and Materials

      The study was conducted in 2 preschool inclusive, multi-age classrooms based on Title One eligibility, early childhood special education qualification, and/or fee-based with an average class size of 14 children. Each preschool classroom was staffed by a public school teacher certified in early childhood education with support from an early childhood special education teacher and at least one paraprofessional teaching assistant.

A speech/language therapist provided language services to students in the classroom as required by Individual Education Plans.

Materials for this study included the Creative Curriculum for Preschool 5th edition. The Creative Curriculum is a developmentally and age appropriate learning materials in a literacy rich classroom environment based on The Creative Curriculum for Preschool 5th Edition. The Creative Curriculum for Preschool 5th Edition was a research-based system that offered early childhood educators comprehensive resources to build high-quality literacy programs. A timer was required to record response wait time.

Dependent Variable

The dependent variable was operationally defined as the emergent literacy skill of alphabet recognition. Alphabet recognition was defined as demonstrating knowledge of the distinctive features and names of individual letters (26) in both upper- and lower-case formats. Correct identification was defined as the participant responding within 5 seconds after receiving the visual cue (letter).

Independent Variable

The independent variable was operationally defined as an embedded–explicit model of emergent literacy intervention. Children's participation in high-quality daily opportunities for naturalistic, meaningful, intentional, and highly contextualized interactions with oral and written language was required. Focused and directed interventions were used to explicitly target children who show delay in acquiring emergent literacy skills.

Outcome Measures

Dependent variable pre-post intervention measures included the Creative Curriculum Literacy Assessment and Alphabet Knowledge Identification Checklist. The Creative Curriculum was a comprehensive and integrative curricular model for early childhood programs. It offered multiple examples of how teachers could implement developmentally appropriate and engaging learning activities that enabled children to progress in each developmental domain and mastery of content knowledge and skills through the use of the Developmental Continuum Assessment System. Four areas of development were addressed in the continuum: social/emotional, physical, cognitive, and language. Reliability was used to refer to the consistency and stability of the information that was obtained through the use of the Continuum. Consistency was used to refer to the extent to which the information from items within factors agreed with itself. Stability was used to refer to the extent to which the same information remained stable over measurements across time. Lambert (2004) determined estimates of the internal consistency reliability of the factor scores of the continuum. All of the coefficients were above .92 Reliability of .80 or greater was considered acceptable.

Experimental Design

A multiple baseline across subjects design was used to evaluate the effectiveness of the embedded—explicit intervention model in increasing alphabet letter recognition across the 3 participants and to demonstrate a functional relationship between the intervention and subjects' alphabet knowledge. A multiple baseline design was chosen to facilitate observation of the effects of the intervention and was not feasible to withdraw or reverse learning students' gains from the intervention.

Procedures

The researcher met with early childhood special education teachers to obtain consent and recruit participants based on eligibility criteria of (a) age range of 3.9 to 4.5 years, (b) identified as developmentally delayed in communication domain, (c) receiving intervention services in preschool setting, and (d) exhibiting delays in literacy skills acquisition). Researcher reviewed students' IEP goals, PLS-4 evaluation results, and Teaching Strategies Gold literacy assessment. Based on the review, parent consent, and child assent, three students were selected for study participation. The researcher recommended activities—which were finalized with each teacher participant—in literacy skills and alphabet recognition strategies for each participant.

Early childhood teachers participated in two 45 minute trainings to introduce the teachers to the intervention model they used to instruct their respective students in strategies to improve literacy skills in alphabet recognition. PI and teacher reviewed student participants' present levels of performance, baseline data, established goals, and determined the specific strategies to be used during the intervention phase. Baseline data collection and individual consultations began during week 6, followed by the implementation of the intervention.

Baseline phase. Response-to-treatment intervention models were organized to provide increasingly intensive tiers of interventions to children. During the baseline phase, embedded literacy instruction was universally provided (Tier 1) to all children in each classroom.

Intervention phase. During the intervention phase, small-group instruction was

provided by classroom teachers as a second tier of intervention to children requiring additional learning opportunities or differentiated instruction for students identified as below age level expectations (Tier 2). Students who did not demonstrate progress in meeting age level norms following Tier 2 interventions received one-to-one instruction (Tier 3). Study participants were selected from Tier 3 intervention groups.

Results

Inter-observer Agreement

Inter-observer agreement was calculated by having a second observer independently record data during two of the sessions. Intervals that were scored identically by both observers were considered to be agreements. Intervals scored differently were considered to be disagreements. Inter-observer agreement was determined by dividing the number of agreements by the number of agreements plus the number of disagreements and multiplying the result by 100%. Inter-bserver agreement was 98%.

Data Collection and Analysis

Informal probes were used to determine children's alphabet identification knowledge. Students were presented with an alphabet identification sheet and asked to name or identify each letter. Data were collected using an alphabet identification sheet from the Creative Curriculum Developmental Continuum with the classroom teacher placing a check next to each correct response within a 5 second wait time. Baseline data were collected at multiple baseline data points before the intervention phase began and collected at two week intervals during the intervention phase for each student.

Letter Identification Results

All participants demonstrated a positive change in the percentage of letters identified after receiving the intervention. The number of alphabet letters identified by naming has been presented in Figure 1. Participants' performance trends were accelerating with no variability. Participant A's baseline was 0% of alphabet letters identified, which increased to 54% during the intervention phase. Participant B's letter identification reached 27 % accuracy after the intervention phase, an increase from the baseline probe of 0%. The performance of Participant C on identifying alphabet letters increase from zero to 19% during week ten of the intervention phase. The Embedded–Explicit Response to Intervention model of emergent literacy intervention was an effective method for teaching alphabet letter recognition to preschool children with developmental delays in the communication domain.

Treatment Integrity

Fidelity of implementation was measured using direct observation for a minimum of 33% of baseline and intervention sessions. The PI and an additional observer used rate recording to document each teacher's accuracy in using the instructional approach as outlined. The degree of variation in treatment fidelity that was accepted over the course of the study was 10%. Treatment integrity was determined by researcher's use of systematic observations of Tier 2 intervention sessions. Teachers' intervention implementation was coded as a (+). Treatment integrity was calculated by dividing the number of intervention sessions implemented by the scheduled number of intervention sessions, then multiplied by 100. Treatment integrity was calculated to be 92%.

Social Validity

The need for all young children to be better prepared to enter school ready to learn has been evident. Early literacy intervention for young children at risk for educational failure has been most effective when instruction was provided in a program of instruction that is thoughtful and purposeful. Social validity data was used to determine teachers' perceptions of the intervention. Teachers completed the Post Intervention Rating Scale at the end of the intervention phase to determine the acceptability of the intervention. Teachers strongly agreed that the intervention targeted an important goal. Teachers strongly agreed that the intervention was feasible to employ. Teachers agreed that the use of the intervention helped to achieve the targeted goal.

Discussion

The purpose of this study was to use an embedded-explicit teaching method to increase the early literacy skill of alphabet letter recognition in preschool children at risk due to developmental or economic disadvantage. The results of this study were consistent with the hypothesis that an embedded–explicit Response to Intervention model of early literacy intervention is effective in increasing alphabet letter recognition. Participants increased alphabet letter identification by a minimum of 19%, increased Creative Curriculum Literacy Continuum level by a minimum of 3 levels, and were able to identify as many as fourteen letters, especially those in their own name within eight weekly intervention sessions.

An important contribution of this study that has extended the previous literature and theoretical understanding of early literacy skills for young children is that early

literacy approaches that have reflected dichotomous theoretical perspectives based on either a top-down holistic model of reading development or a bottom-up reductionist learning model (Bloom & Lahey, 1978) are integrated to provide a more balanced approach to developing literacy skills in at-risk preschool students. This finding is consistent with Justice and Kadaravek's view that an integrated approach capitalizing on evidence-based practices of seemingly dichotomous orientations is an optimal method for maximizing emergent literacy skills for young children. I suggested that at-risk children, including those with communication delays, can benefit from explicit training on a wide range of language and literacy forms that are closely aligned with early literacy development and later reading achievement. An embedded approach to supporting literacy development is important for promoting positive literacy interest and for ensuring maintainable and generalized literacy skills. In this study, teachers provided balanced interventions to ensure children's participation in socially embedded, highly contextualized literacy interactions that promoted interest in literacy experiences, with the use of direct, explicit activities that resulted in developmental gains.

Limitations

A limitation of this study was the small number of participants. The small participant size can affect the degree of confidence in the generalizability of the intervention. Future research directions include an extended study with control and experimental groups to strengthen the validity and generalizability of this study.

Conclusion

The purpose of this study was to use an embedded-explicit teaching method to increase the early literacy skill of alphabet letter recognition in preschool children at risk of school challenges due to developmental or economic disadvantage. Participants in this study were three children ranging in ages from 3.9 to 4.5 years who received preschool services from a public school early learning center whose level of literacy learning was below that of their classroom peers and who exhibited a communicative developmental delay. The results of this study are consistent with the hypothesis that an embedded–explicit Response to Intervention model of early literacy intervention is effective in increasing alphabet letter recognition. Students made gains in alphabet letter recognition and increased their early literacy skills after participating in socially embedded, highly contextualized literacy interactions that promoted interest in literacy experiences. The use of these direct, explicit activities resulted in developmental gains.

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